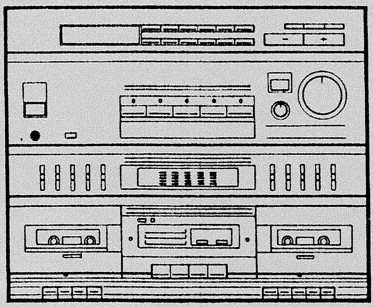
Service Manual

PIONEER®
The future of sound and vision.



ORDER NO.
ARP1787

STEREO CASSETTE TAPE DECK RECEIVER

RX-721
RX-721S
RX-521

RX-721,RX-721S AND RX-521 HAVE TWO VERSIONS:

Type	Applicable model			Power requirement	Destination
	RX-721	RX-721S	RX-521		
KU	○	○	○	AC120V only	U.S.A.
KC	○	–	○	AC120V only	Canada

- This manual is applicable to the RX-721/KU,KC,RX-521/KU,KC and RX-721S/KU types.
- For the RX-721/KC,RX-521/KU,KC and RX-721S/KU types,refer to pages 45-50.

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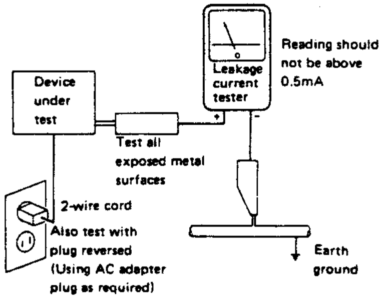
1. SAFETY INFORMATION

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Device under test
Leakage current tester
Reading should not be above 0.5mA
Test all exposed metal surfaces
2-wire cord
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. EXPLODED VIEWS AND PARTS LIST

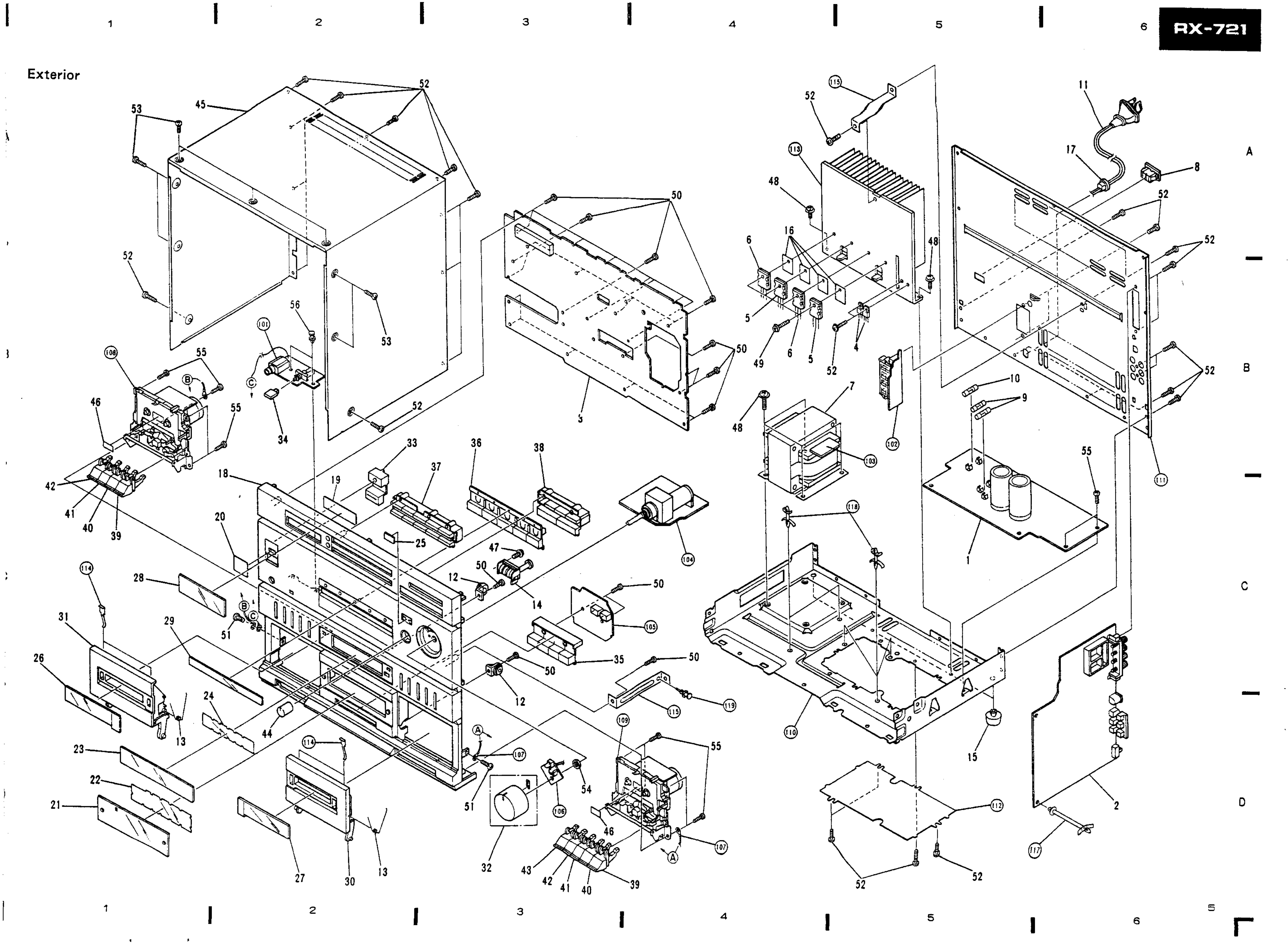
NOTES:
- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

2.1 EXTERIOR

Parts list of Exterior

Mark	No.	Parts No.	Description
	1	AWZ2288	Power assembly
	2	AWZ2292	Complex assembly
	3	AWZ2294	Control assembly
⚠	4	NJM7812FA	Regulator IC (IC701,IC702)
⚠	5	2SA1302	Transistor (Q3,Q4)
⚠	6	2SC3281	Transistor (Q1,Q2)
⚠	7	ATS1196	Power transformer (AC120V,T1)
⚠	8	AKP1015	AC socket (1P OUTLET)
⚠	9	AEK-122	Fuse (2A/125V,FU2,FU3)
⚠	10	AEK-309	Fuse (6.3A/125V,FU1)
⚠	11	ADG1033	AC Power cord
	12	AXA1004	Damper assembly
	13	ABH1043	Door spring
	14	AAW1008	Counter
	15	AEC-784	Leg assembly
	16	AEE1014	Mica sheet
	17	AEP-113	Strain relief
	18	AMB1462	Front panel
	19	AAK1227	FL filter
	20	AAK1675	Power panel
	21	AAK1676	Deck center panel A
	22	AAK1677	Deck center panel B
	23	AAK1678	Spectrum analyzer panel A
	24	AAK1679	Spectrum analyzer panel B
	25	AAK1680	IR filter
	26	AAK1681	Door panel L
	27	AAK1682	Door panel R
	28	AAK1683	Tuner display panel
	29	AAK1684	Function panel
	30	AAN1112	Door R
	31	AAN1113	Door L
	32	AAB1102	Rotary knob assembly
	33	AAD1336	Button (POWER)
	34	AAD1544	Push button
	35	AAD1545	Button (COPY)
	36	AAD1546	Button (FUNCTION)
	37	AAD1547	Button (STATION)
	38	AAD1548	Button (BAND)
	39	AAE1104	Button (DECK)
	40	AAE1105	Button (DECK)
	41	AAE1106	Button (DECK)
	42	AAE1107	Button (DECK)
	43	AAE1108	Button (DECK)
	44	RAC1211	VR knob B
	45	ANE1191	Bonnet case
	46	AAX1301	Remain display sheet
	47	ABA1005	Screw
	48	ABA1021	Screw (3 × 10)
	49	ABA1037	Screw (3 × 14)
	50	BBZ26P080FMC	Screw
	51	BBZ30P080FMC	Screw
	52	BBZ30P080FZK	Screw
	53	BPZ30P100FZK	Screw
	54	NK90FUC	Nut
	55	VPZ30P080FMC	Screw
	56	AMR1066	Plastic revet
	101		Head phone assembly
	102		SP Out assembly
	103		Connect assembly
	104		Main VR assembly
	105		Deck SW assembly
	106		VR LED assembly
	107		Earth lead
	108		Tape transport unit (DECK Ⅰ)
	109		Tape transport unit (DECK Ⅱ)
	110		Chassis
	111		Rear panel
	112		Bottom plate
	113		Heat sink
	114		Keep plate
	115		PCB Heat sink holder
	116		Binder
	117		PC suport
	118		Spacer
	119		Pin grommet

Exterior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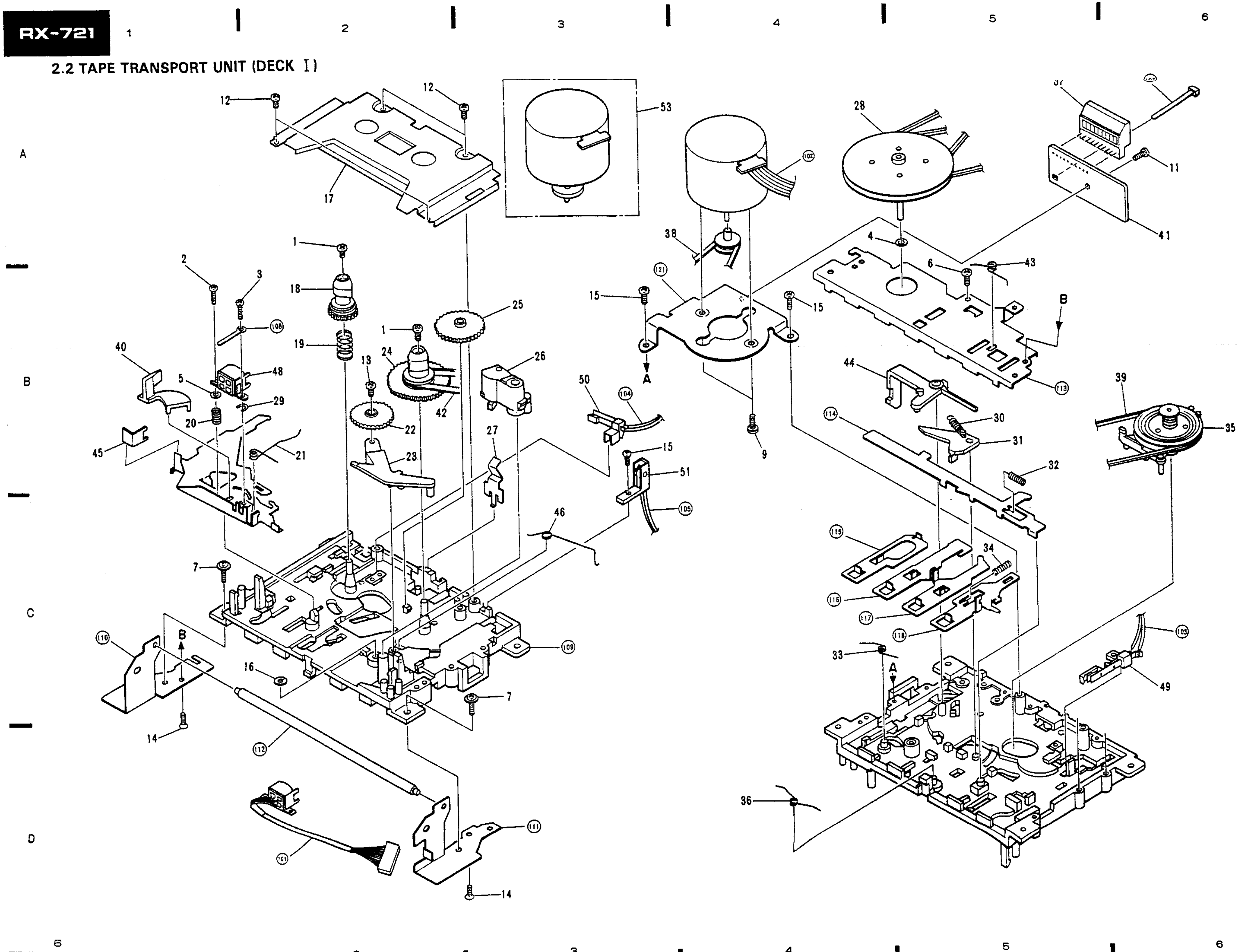
2.2 TAPE TRANSPORT UNIT (DECK I)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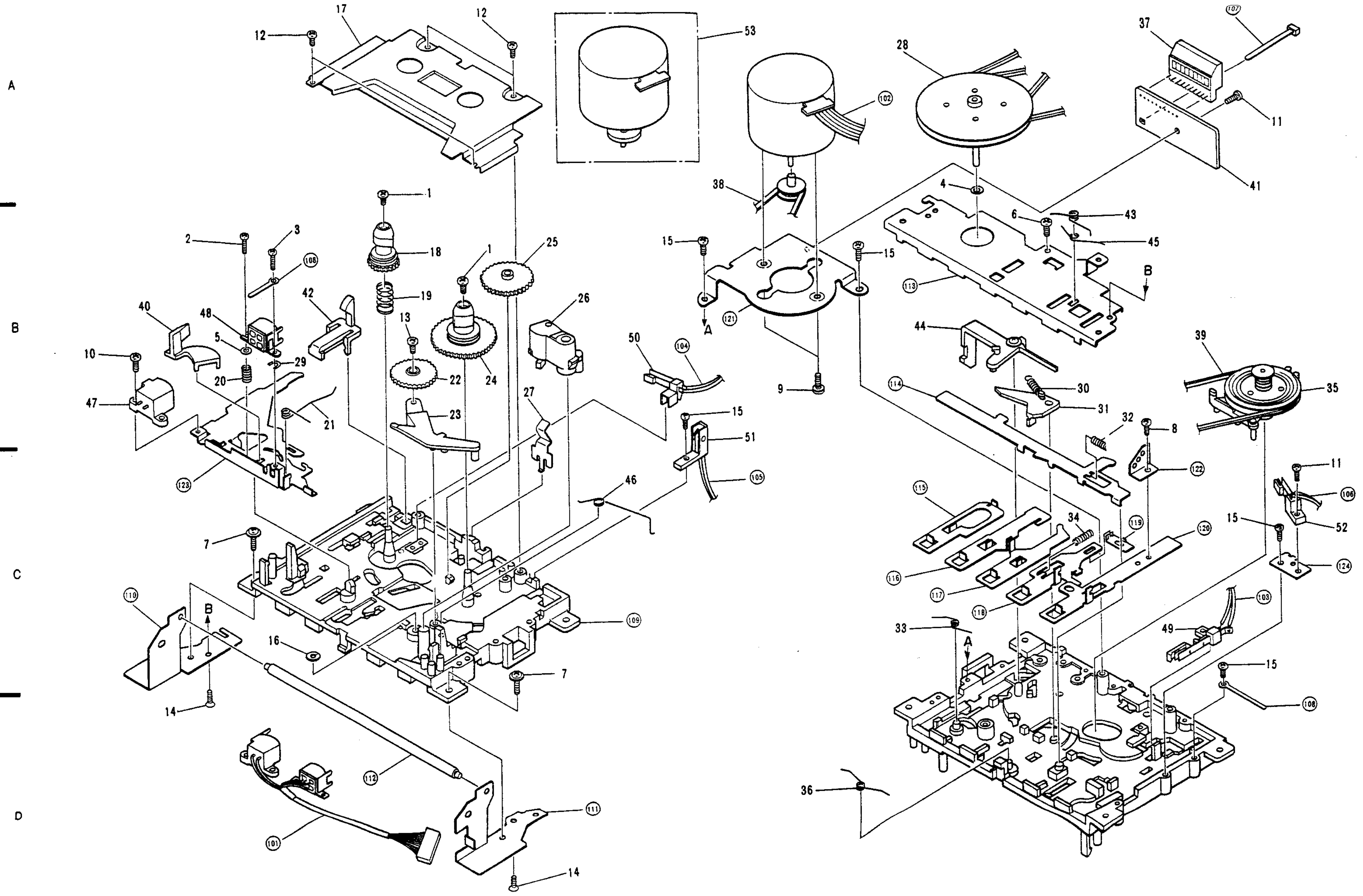
6

Parts list of Tape transport unit (DECK I)

Mark	No.	Parts No.	Description
	1	AZB1165	Bush D
	2	AZB1166	N screw
	3	AZB1167	P screw
	4	AZB1168	P washer
	5	AZB1169	F washer
	6	AZB1170	Bush C
	7	AZB1171	D screw
	8	....	....
	9	AZB1173	P screw
	10	....	....
	11	AZB1176	D screw
	12	AZB1183	L screw
	13	AZB1184	Bush
	14	AZB1190	L screw
	15	AZB1191	L screw
	16	AZB1194	N washer
	17	AZN1902	Mechanism cover
	18	AZN1480	S reel
	19	AZN1481	C spring
	20	AZN1482	Azimuth C spring
	21	AZN1483	Pinch arm spring
	22	AZN1484	Idler gear
	23	AZN1485	Idler arm
	24	AZN1486	T reel assembly
	25	AZN1487	F gear
	26	AZN1488	Pinch arm assembly
	27	AZN1489	Cassette spring
	28	AZN1491	FW assembly W
	29	AZN1494	Spacer C
	30	AZN1498	T spring
	31	AZN1499	S arm
	32	AZN1500	C spring
	33	AZN1501	Spring
	34	AZN1502	C spring
	35	AZN1503	Power arm assembly
	36	AZN1504	Spring
	37	AZN1901	Connector
	38	AZN1506	Belt
	39	AZN1507	Belt
	40	AZN1508	Tape sensor
	41	AZN1571	Main PCB
	42	AZN1899	Counter belt
	43	AZN1752	Spring
	44	AZN1753	Eject arm
	45	AZN1900	Tape guide
	46	AZN1922	Spring
	47	....	....
	48	AZP1036	R/P head
	49	AZS1059	Leaf switch (MOTOR)
	50	AZS1060	Leaf switch (MUTE)
	51	AZS1061	Leaf switch (CrO2)
	52	....	....
	53	AZX1021	Motor assembly
	101		Connector assembly
	102		Jumper wire
	103		Lead wire
	104		Lead wire
	105		Lead wire
	106		....
	107		Nylon band
	108		Lug plate
	109		Chassis assembly
	110		Holder button
	111		Holder button R
	112		Shaft
	113		Back plate
	114		Function lever
	115		SE lever
	116		FF lever
	117		REW lever
	118		PLAY lever
	119		....
	120		....
	121		Motor bracket
	122		....
	123		Head base B

2.3 TAPE TRANSPORT UNIT (DECK Ⅱ)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(111)
(101)
14

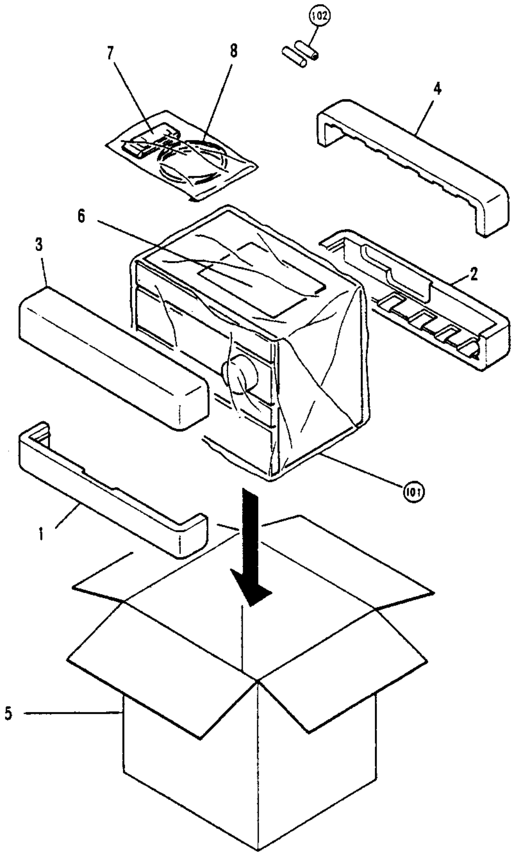
Parts list of Tape transport unit (DECK Ⅱ)

Mark	No.	Parts No.	Description
	1	AZB1165	Bush D
	2	AZB1166	N screw
	3	AZB1167	P screw
	4	AZB1168	P washer
	5	AZB1169	F washer
	6	AZB1170	Bush C
	7	AZB1171	D screw
	8	AZB1172	D screw
	9	AZB1173	P screw
	10	AZB1175	D bind screw
	11	AZB1176	D screw
	12	AZB1183	L screw
	13	AZB1184	Bush
	14	AZB1190	L screw
	15	AZB1191	L screw
	16	AZB1194	N washer
	17	AZN1479	Mechanism cover
	18	AZN1480	S reel
	19	AZN1481	C spring
	20	AZN1482	Azimuth C spring
	21	AZN1483	Pinch arm spring
	22	AZN1484	Idler gear
	23	AZN1485	Idler arm
	24	AZN1486	T reel assembly
	25	AZN1487	F gear
	26	AZN1488	Pinch arm assembly
	27	AZN1489	Cassette spring
	28	AZN1491	FW assembly W
	29	AZN1494	Spacer C
	30	AZN1498	T spring
	31	AZN1499	S arm
	32	AZN1500	C spring
	33	AZN1501	Spring
	34	AZN1502	C spring
	35	AZN1503	Power arm assembly
	36	AZN1504	Spring
	37	AZN1505	Connector
	38	AZN1506	Belt
	39	AZN1507	Belt
	40	AZN1508	Tape sensor
	41	AZN1571	Main PCB
	42	AZN1572	Interlock arm
	43	AZN1752	Spring
	44	AZN1753	Eject arm
	45	AZN1903	Spring
	46	AZN1922	Spring
	47	AZP1025	E head
	48	AZP1036	R/P head
	49	AZS1059	Leaf switch (MOTOR)
	50	AZS1060	Leaf switch (MUTE)
	51	AZS1061	Leaf switch (CrO2)
	52	AZS1062	Leaf switch (REC)
	53	AZX1021	Motor assembly
	101		Connector assembly
	102		Jumper wire
	103		Lead wire
	104		Lead wire
	105		Lead wire
	106		Lead wire
	107		Nylon band
	108		Lug plate
	109		Chassis assembly
	110		Holder button
	111		Holder button R
	112		Shaft
	113		Back plate
	114		Function lever
	115		SE lever
	116		FF lever
	117		REW lever
	118		PLAY lever
	119		REC STOP lever
	120		REC lever
	121		Motor bracket
	122		RSW lever
	123		Head base B
	124		SW plate

3. PACKING

Parts list of Packing

Mark	No.	Parts No.	Description
	1	AHA1242	Front pad A
	2	AHA1243	Rear pad A
	3	AHA1244	Front pad B
	4	AHA1245	Rear pad B
	5	AHD1604	Packing case
	6	ARB1162	Operating instructions (English)
	7	AXD1048	Remote control unit
	8	AEA1007	Antenna set
	101		Sheet
	102		Battery



4. SCHEMATIC DIAGRAM

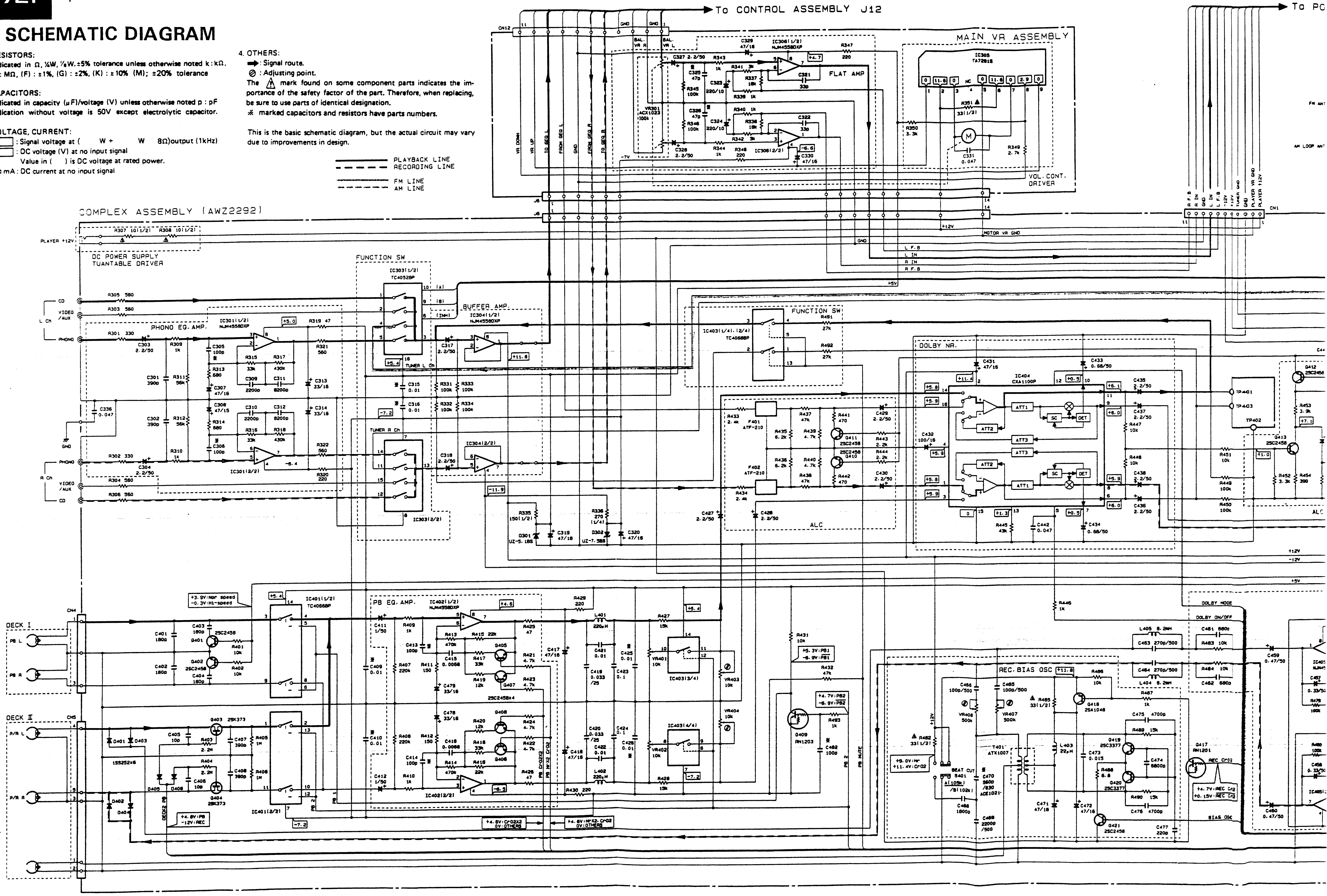
1. RESISTORS:
   Indicated in Ω, ¼W, ⅛W. ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) : ±1%, (G) : ±2%, (K) : ±10% (M); ±20% tolerance

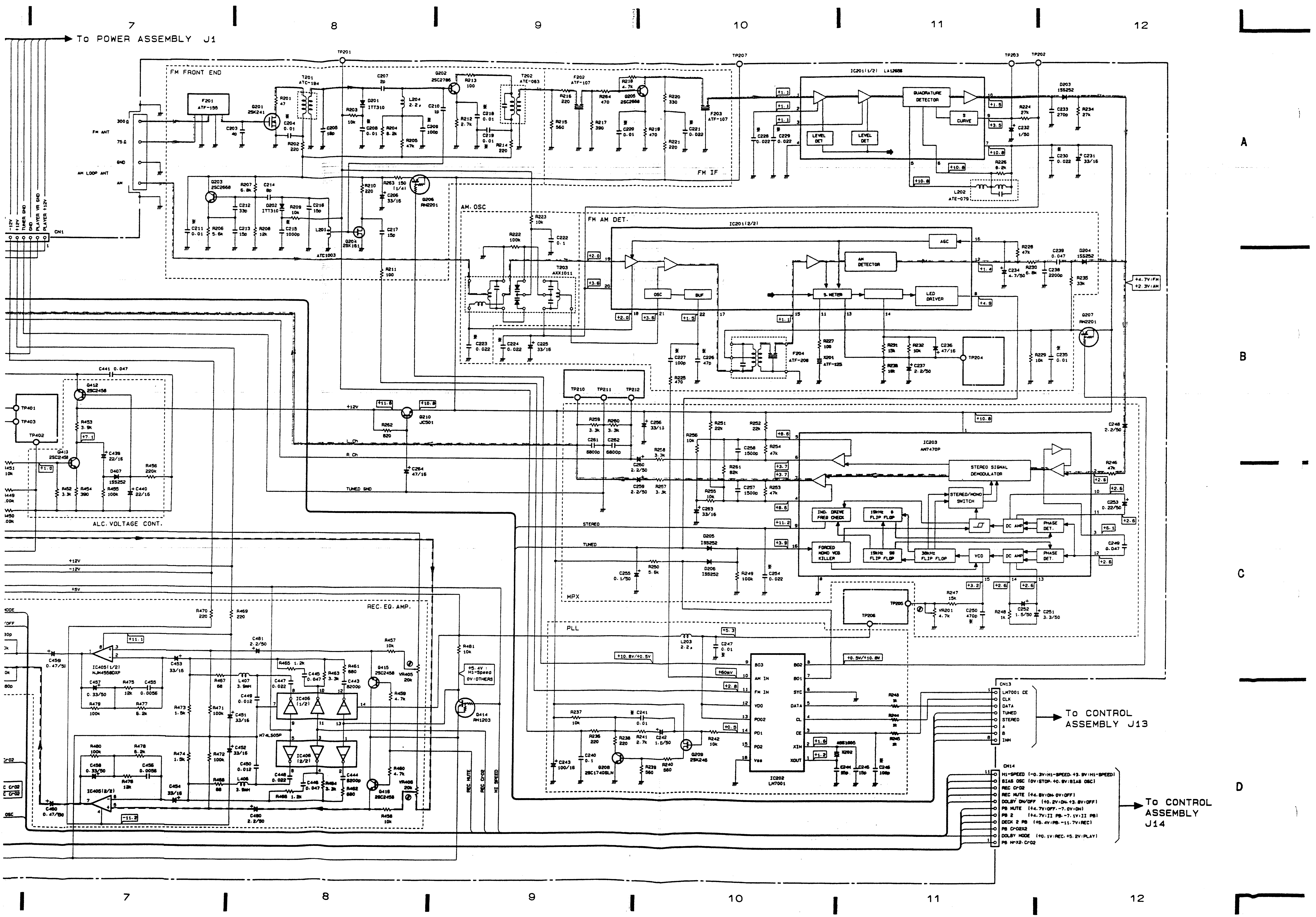
2. CAPACITORS:
   Indicated in capacity (μF)/voltage (V) unless otherwise noted p : pF
   Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT:
   ▭ : Signal voltage at (W +   W   8Ω)output (1kHz)
   ▭ : DC voltage (V) at no input signal
   Value in (   ) is DC voltage at rated power.
   ⇦ mA : DC current at no input signal

4. OTHERS:
   ➡ : Signal route.
   ⊘ : Adjusting point.
   The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
   ※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.


PLAYBACK LINE
RECORDING LINE
FM LINE
AM LINE
1
2
3
4
5
6
A
B
C
D
To CONTROL ASSEMBLY J12
CN12
MAIN VR ASSEMBLY
IC305 TA7291S
FLAT AMP
IC306(1/2) NJM4558DXP
IC306(2/2)
VR301 ACX1023 100k
VOL. CONT. DRIVER
J6
To PC
CN1
COMPLEX ASSEMBLY (AWZ2292)
PLAYER +12V
DC POWER SUPPLY TUANTABLE DRIVER
FUNCTION SW
IC303(1/2) TC4052BP
IC303(2/2)
BUFFER AMP.
IC304(1/2) NJM4558DXP
IC304(2/2)
PHONO EQ. AMP.
IC301(1/2) NJM4558DXP
IC301(2/2)
L Ch
R Ch
CD
VIDEO /AUX
PHONO
GND
TUNER L Ch
TUNER R Ch
FUNCTION SW
IC403(1/4),(2/4) TC4066BP
DOLBY NR.
IC404 CXA1100P
ALC
F401 ATF-210
F402 ATF-210
TP401
TP402
TP403
DECK I
DECK II
CN4
CN5
IC401(1/2) TC4066BP
IC401(2/2)
PB EQ. AMP.
IC402(1/2) NJM4558DXP
IC402(2/2)
IC403(3/4)
IC403(4/4)
REC. BIAS OSC
T401 ATX1007
DOLBY MODE
DOLBY ON/OFF
BIAS OSC
+3.9V:Nor speed -0.3V:Hi-speed
+4.8V:PB -12V:REC
+4.6V:CrO2X2 0V:OTHERS
+4.6V:N*X2. CrO2 0V:OTHERS
+5.3V:PB1 -6.9V:PB1
+4.7V:PB2 -6.9V:PB2
+9.0V:Nr +11.4V:CrO2
+4.7V:REC CrO2 +0.15V:REC CrO2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A
B
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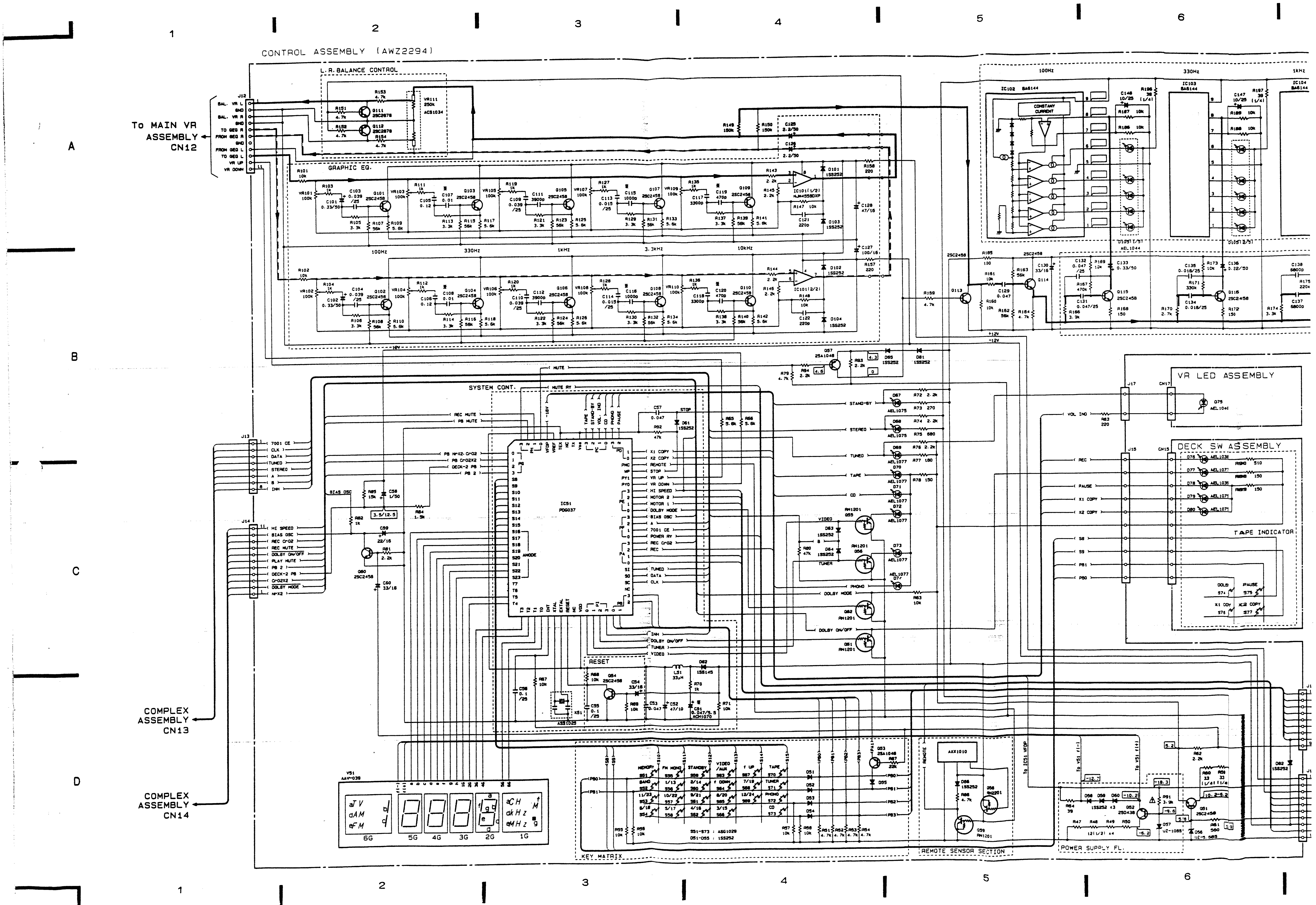
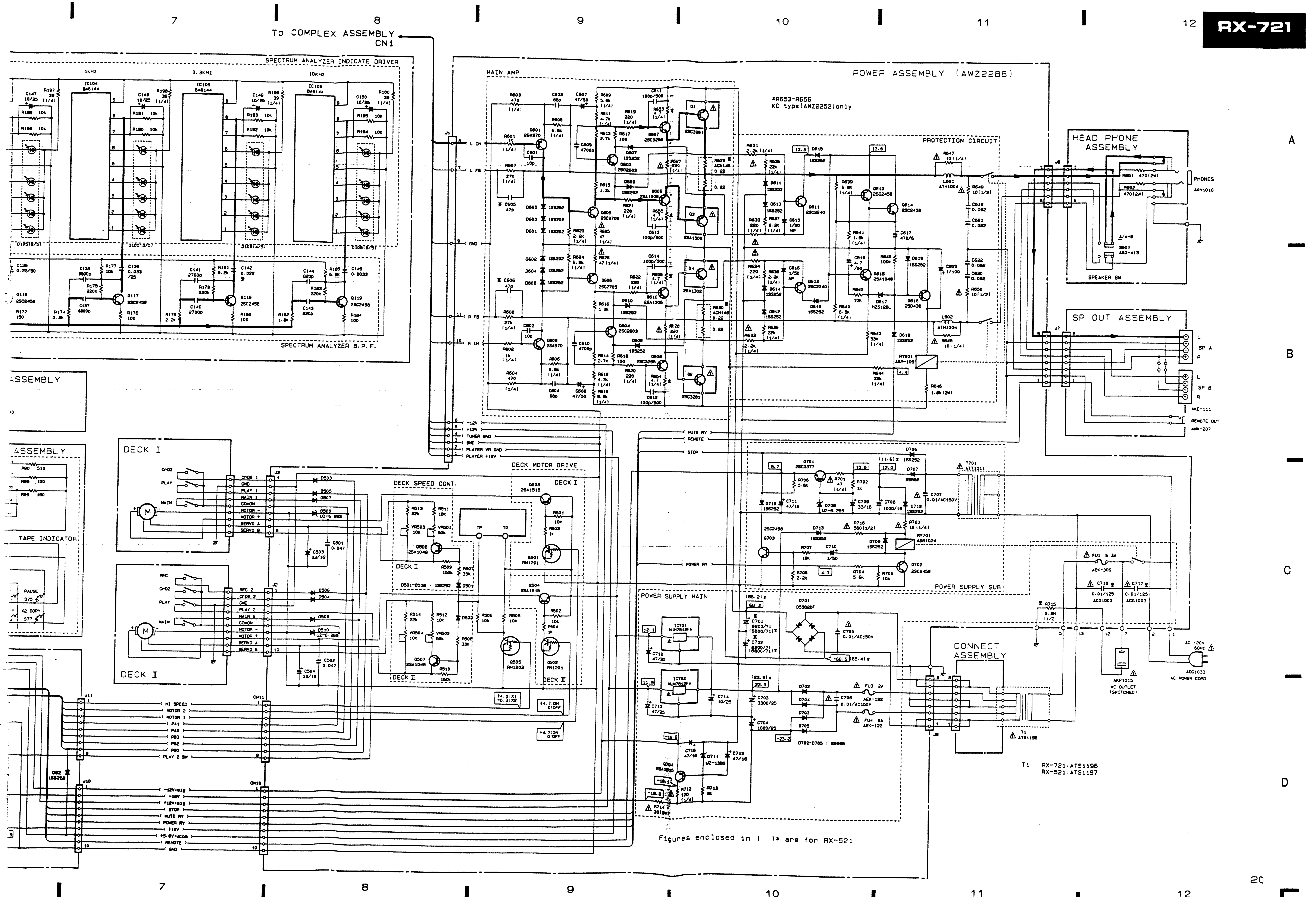
D
To POWER ASSEMBLY J1
FM FRONT END
FM IF
AM. OSC
FM AM DET.
MPX
PLL
REC. EQ. AMP.
ALC. VOLTAGE CONT.
FM ANT
300 Ω
75 Ω
GND
AM LOOP ANT
AM
CN1
-12V
+12V
TUNER GND
GND
PLAYER VR GND
PLAYER +12V
F201 ATF-155
Q201 2SK241
T201 ATC-184
Q202 2SC2786
T202 ATE-063
F202 ATF-107
Q205 2SC2668
F203 ATF-107
Q203 2SC2668
Q204 2SK161
Q206 RN2201
ATC1003
T203 AXX1011
IC201(1/2) LA1266
QUADRATURE DETECTOR
S CURVE
LEVEL DET
L202 ATE-079
IC201(2/2)
AGC
AM DETECTOR
OSC
BUF
S. METER
LED DRIVER
F204 ATF-206
X201 ATF-125
TP201
TP202
TP203
TP204
TP205
TP206
TP207
TP210
TP211
TP212
TP401
TP402
TP403
Q207 RN2201
+4.7V:FM
+2.3V:AM
Q210 JC501
+12V
L Ch
R Ch
TUNED GND
STEREO
TUNED
IC203 AN7470P
STEREO SIGNAL DEMODULATOR
STEREO/MONO SWITCH
IND. DRIVE FREQ CHECK
19kHz 0 FLIP FLOP
19kHz 90 FLIP FLOP
38kHz FLIP FLOP
FORCED MONO VCO KILLER
DC AMP
PHASE DET.
VCO
D205 1SS252
D206 1SS252
Q412 2SC2458
Q413 2SC2458
D407 1SS252
-12V
+5V
IC405(1/2) NJM4558DXP
IC405(2/2)
IC406(1/2)
IC406(2/2)
M74LS05P
Q415 2SC2458
Q416 2SC2458
Q414 RN1203
VR405 20k
VR406 20k
+5.4V: Hi-Speed 0V:OTHERS
REC MUTE
REC CrO2
HI SPEED
IC202 LM7001
L203 2.2μ
Q208 2SC1740SLN
Q209 2SK246
X202
+10.8V/+0.5V
+0.5V/+10.8V
B03
AM IN
FM IN
VDD
PD02
PD1
PD2
Vss
B02
B01
SYC
DATA
CL
CE
XIN
XOUT
CN13
LM7001 CE
CLK
DATA
TUNED
STEREO
A
B
INH
To CONTROL ASSEMBLY J13
CN14
Hi-SPEED (-0.3V:Hi-SPEED, +3.9V:Hi-SPEED)
BIAS OSC (0V:STOP, +0.9V:BIAS OSC)
REC CrO2
REC MUTE (+4.8V:ON, 0V:OFF)
DOLBY ON/OFF (+0.2V:ON, +3.8V:OFF)
PB MUTE (+4.7V:OFF, -7.0V:ON)
PB 2 (+4.7V:II PB, -7.1V:II PB)
DECK 2 PB (+5.4V:PB, -11.7V:REC)
PB CrO2X2
DOLBY MODE (+0.1V:REC, +5.2V:PLAY)
PB NrX2, CrO2
To CONTROL ASSEMBLY J14


CONTROL ASSEMBLY (AWZ2294)
L.R.BALANCE CONTROL
GRAPHIC EQ.
To MAIN VR ASSEMBLY CN12
J12
BAL. VR L
BAL. VR R
TO GEQ R
FROM GEQ R
FROM GEQ L
TO GEQ L
VR UP
VR DOWN
100Hz
330Hz
1kHz
3.3kHz
10kHz
IC101 NJM4558DXP
IC102 BA6144
IC103 BA6144
IC104 BA6144
CONSTANT CURRENT
D105 AEL1044
SYSTEM CONT.
IC51 PDG037
MUTE
MUTE RY
REC MUTE
PB MUTE
J13
7001 CE
CLK
DATA
TUNED
STEREO
INH
J14
HI SPEED
BIAS OSC
REC CrO2
REC MUTE
DOLBY ON/OFF
PLAY MUTE
PB 2
DECK-2 PB
CrO2X2
DOLBY MODE
NrX2
COMPLEX ASSEMBLY CN13
COMPLEX ASSEMBLY CN14
RESET
STAND-BY
STEREO
TUNED
TAPE
CD
VIDEO
TUNER
PHONO
DOLBY MODE
DOLBY ON/OFF
VR LED ASSEMBLY
J17
CN17
VOL IND
DECK SW ASSEMBLY
J15
CN15
REC
PAUSE
X1 COPY
X2 COPY
TAPE INDICATOR
DOLB
X1 COY
X2 COPY
V51 AAV-039
6G
5G
4G
3G
2G
1G
KEY MATRIX
MEMORY
FM MONO
STANDBY
VIDEO /AUX
f UP
TAPE
BAND
f DOWN
TUNER
PHONO
CD
S51-S73 : ASG1029
D51-D55 : 1SS252
REMOTE SENSOR SECTION
AXX1010
POWER SUPPLY FL.
To V51 f(-)
To V51 f(+)
To IC51 VFDP
1
2
3
4
5
6
A
B
C
D

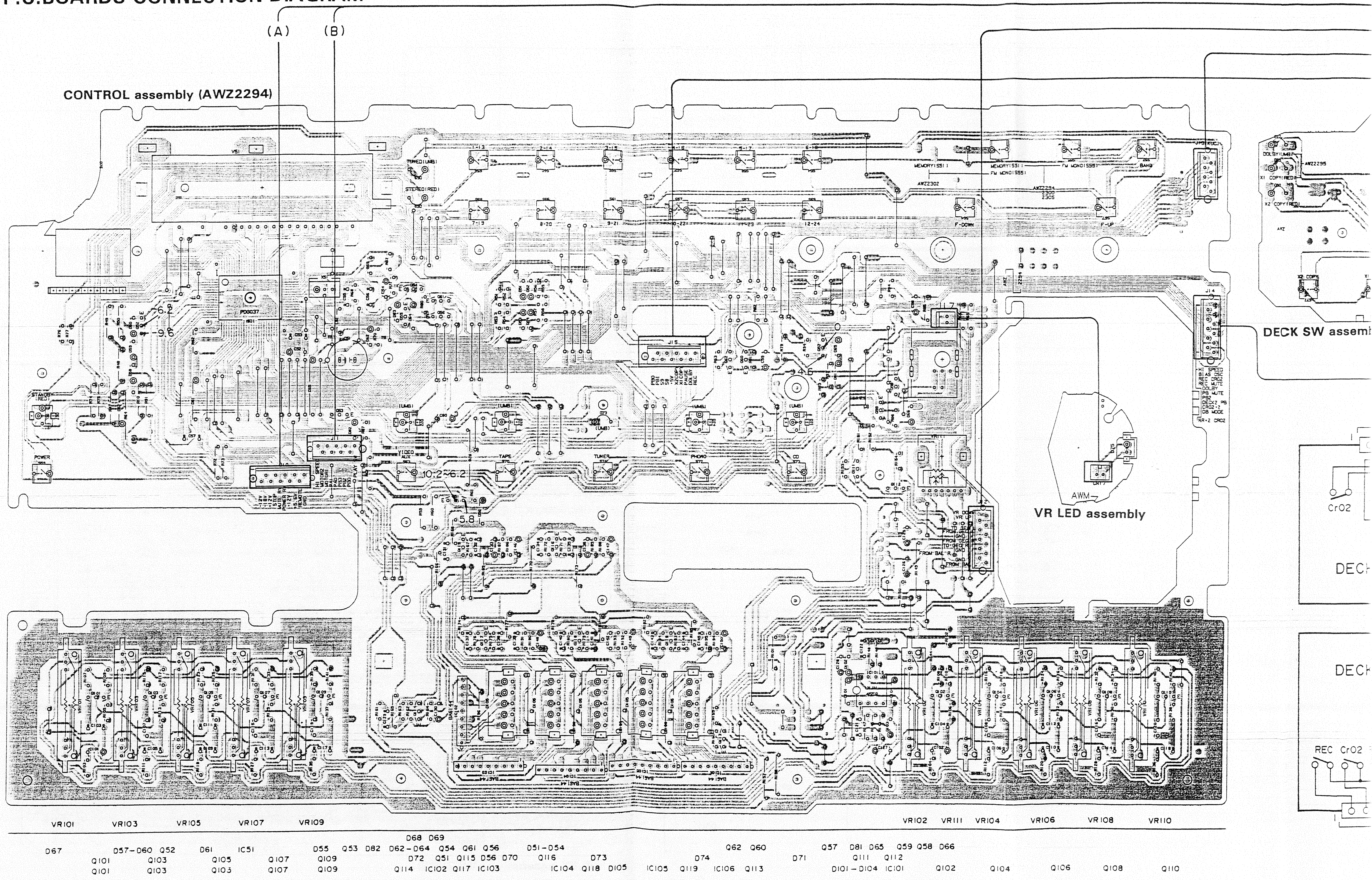

7
8
9
10
11
12
A
B
C
D
To COMPLEX ASSEMBLY CN1
SPECTRUM ANALYZER INDICATE DRIVER
1kHz
3.3kHz
10kHz
IC104 BA6144
IC105 BA6144
IC106 BA6144
SPECTRUM ANALYZER B.P.F.
POWER ASSEMBLY (AWZ2288)
MAIN AMP
PROTECTION CIRCUIT
HEAD PHONE ASSEMBLY
PHONES
AKN1010
SPEAKER SW
SP OUT ASSEMBLY
SP A
SP B
AKE-111
REMOTE OUT
AKM-207
L IN
L FB
GND
R FB
R IN
-12V
+12V
TUNER GND
GND
PLAYER VR GND
PLAYER +12V
MUTE RY
REMOTE
STOP
POWER RY
DECK I
DECK II
DECK MOTOR DRIVE
DECK SPEED CONT.
TAPE INDICATOR
PAUSE
X2 COPY
ASSEMBLY
POWER SUPPLY SUB
POWER SUPPLY MAIN
CONNECT ASSEMBLY
IC701 NJM7812FA
IC702 NJM7812FA
D701 D5SB20F
AC 120V 60Hz
ADG1033 AC POWER CORD
AKP1015 AC OUTLET (SWITCHED)
FU1 6.3A AEK-309
FU3 2A AEK-122
FU4 2A AEK-122
T701 ATT1011
RY701 ASR1024
RY601 ASR-109
T1 ATS1196
D702-D705 : S5566
D501-D508 : 1SS252
HI SPEED
MOTOR 2
MOTOR 1
PLAY 2 SW
+5.6V(ucom)
J1
J2
J3
J7
J8
J9
J10
J11
CN10
CN11

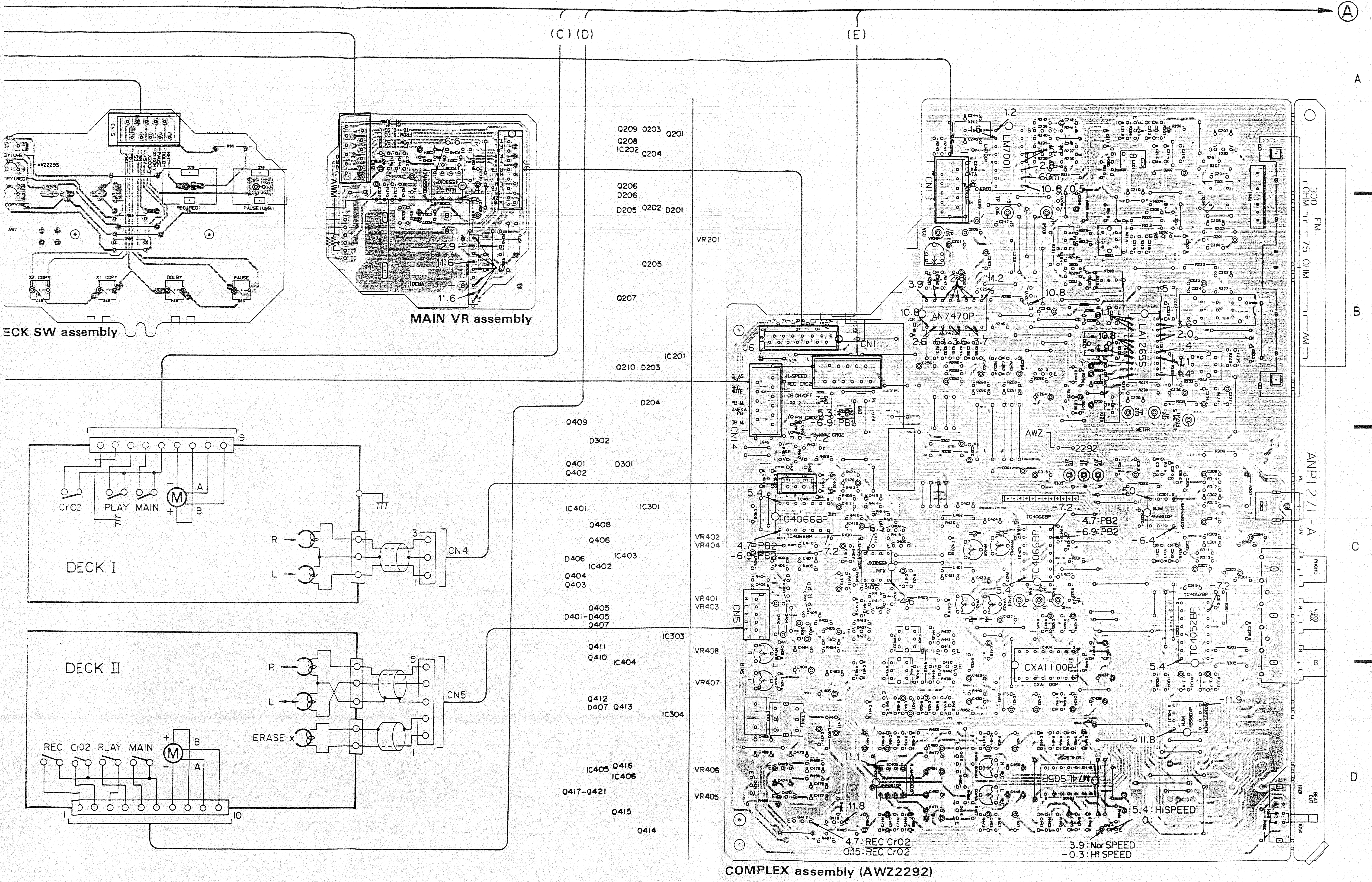
*R653-R656
KC type(AWZ2252)only

Figures enclosed in ( )* are for RX-521

T1 RX-721:ATS1196
RX-521:ATS1197

5. P.C.BOARDS CONNECTION DIAGRAM


1
2
3
4
5
6
A
B
C
D
(A)
(B)
CONTROL assembly (AWZ2294)
DECK SW assembl
VR LED assembly
AWM
DEC
DECK
CrO2
REC CrO2
DOLBY(UMB)
X1 COPY(RED)
X2 COPY(RED)
AWZ2295
J14
J15
PD8037
STANDBY (RED)
POWER
TUNED(UMB)
STEREO(RED)
MEMORY(S51)
FM MONO(S55)
AWZ2302
AWZ2294
BAND
F-DOWN
F-UP
VIDEO AUX
TAPE
TUNER
PHONO
VR101
VR103
VR105
VR107
VR109
VR102
VR111
VR104
VR106
VR108
VR110
D67
Q101
D57–D60
Q103
Q52
D61
Q105
IC51
Q107
D55
Q109
Q53
D82
D68
D69
D62–D64
Q54
Q61
Q56
D72
Q51
Q115
D56
D70
Q114
IC102
Q117
IC103
D51–D54
Q116
IC104
D73
Q118
D105
IC105
D74
Q119
IC106
Q62
Q60
Q113
D71
Q57
D81
D65
Q59
Q58
D66
Q111
Q112
D101–D104
IC101
Q102
Q104
Q106
Q108
Q110


7
8
9
10
11
12
A
B
C
D
(C) (D)
(E)
ⓐ
ECK SW assembly
AWZ2295
REC(RED)
PAUSE(UMB)
X2 COPY
X1 COPY
DOLBY
PAUSE
MAIN VR assembly
AWM
6.6
2.9
11.6
11.6
Q209 Q203 Q201
Q208
IC202 Q204
Q206
D206
D205 Q202 D201
VR201
Q205
Q207
IC201
Q210 D203
D204
Q409
D302
Q401 D301
Q402
IC401 IC301
Q408
Q406
VR402
VR404
D406 IC403
IC402
Q404
Q403
VR401
VR403
Q405
D401–D405
Q407
IC303
Q411
Q410 IC404
VR408
VR407
Q412
D407 Q413
IC304
IC405 Q416
IC406
VR406
Q417–Q421
VR405
Q415
Q414
1
9
CrO2
PLAY
MAIN
M
A
B
R
L
3
1
CN4
DECK I
DECK II
R
L
5
CN5
ERASE
1
REC
CrO2
PLAY
MAIN
M
B
A
1
10
COMPLEX assembly (AWZ2292)
CN13
LM7001
1.2
2.8
6.0
10.8
6.0
0.5
3.9
11.2
10.8
AN7470P
10.8
2.6
6.1
6.3
6.7
LA1265
10.8
4.9
1.5
3.6
2.0
1.4
1.4
CN6
CN1
CN14
HI-SPEED
REC CrO2
DB ON/OFF
PB 2
5.4
6.9:PB1
AWZ
2292
T. METER
300 OHM
FM
75 OHM
AM
ANP1271-A
5.4
TC4066BP
4.7:PB2
6.9:PB2
7.2
7.2
4.7:PB2
6.9:PB2
TC4066BP
6.4
TC4052BP
7.2
5.4
CXA1100P
11.9
NJM4558DD
11.8
11.1
11.8
4.7:REC CrO2
0.15:REC CrO2
M74LS05P
5.4:HISPEED
3.9:Nor SPEED
−0.3:HI SPEED
BIAS

NOTE

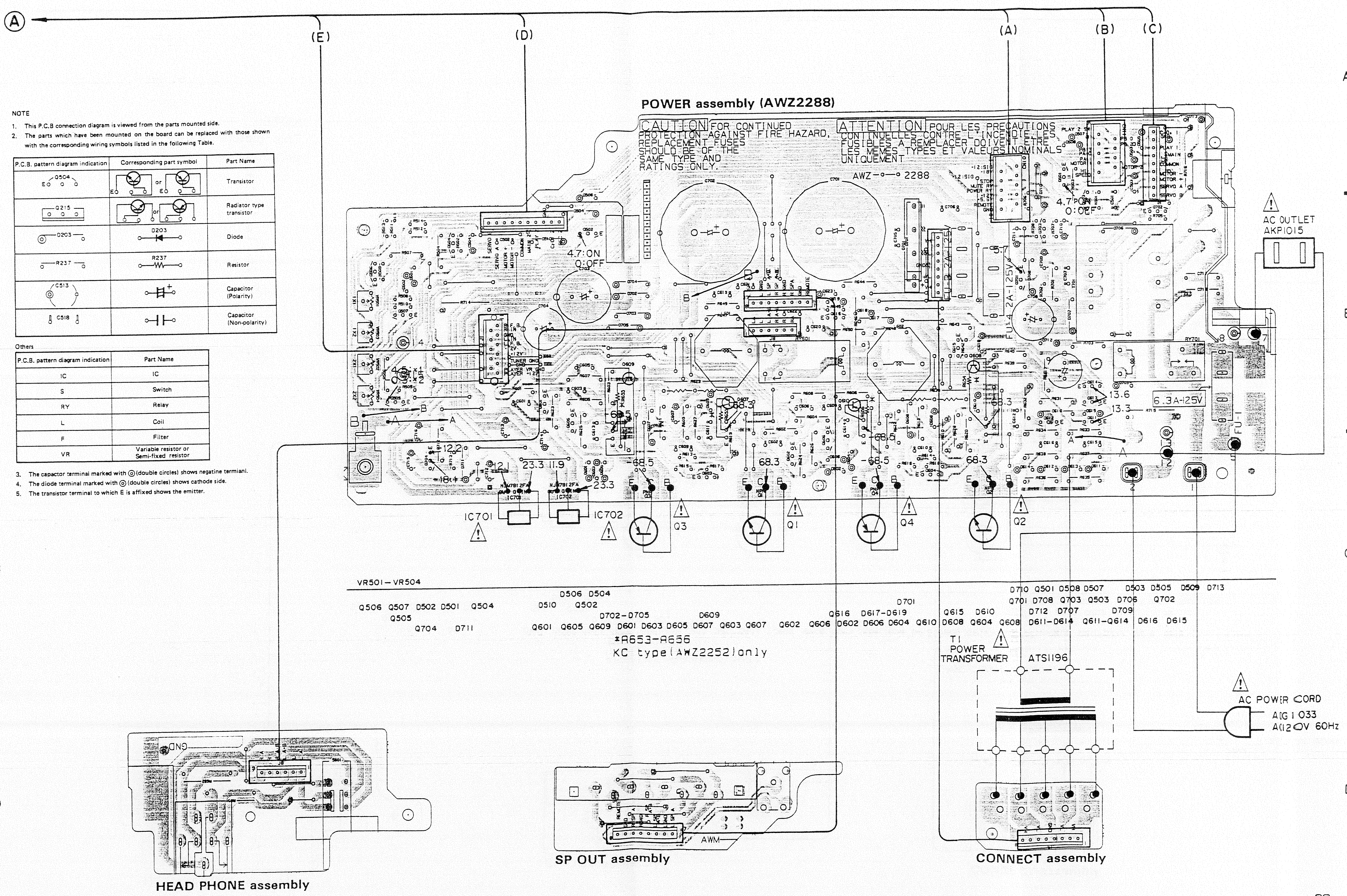
1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

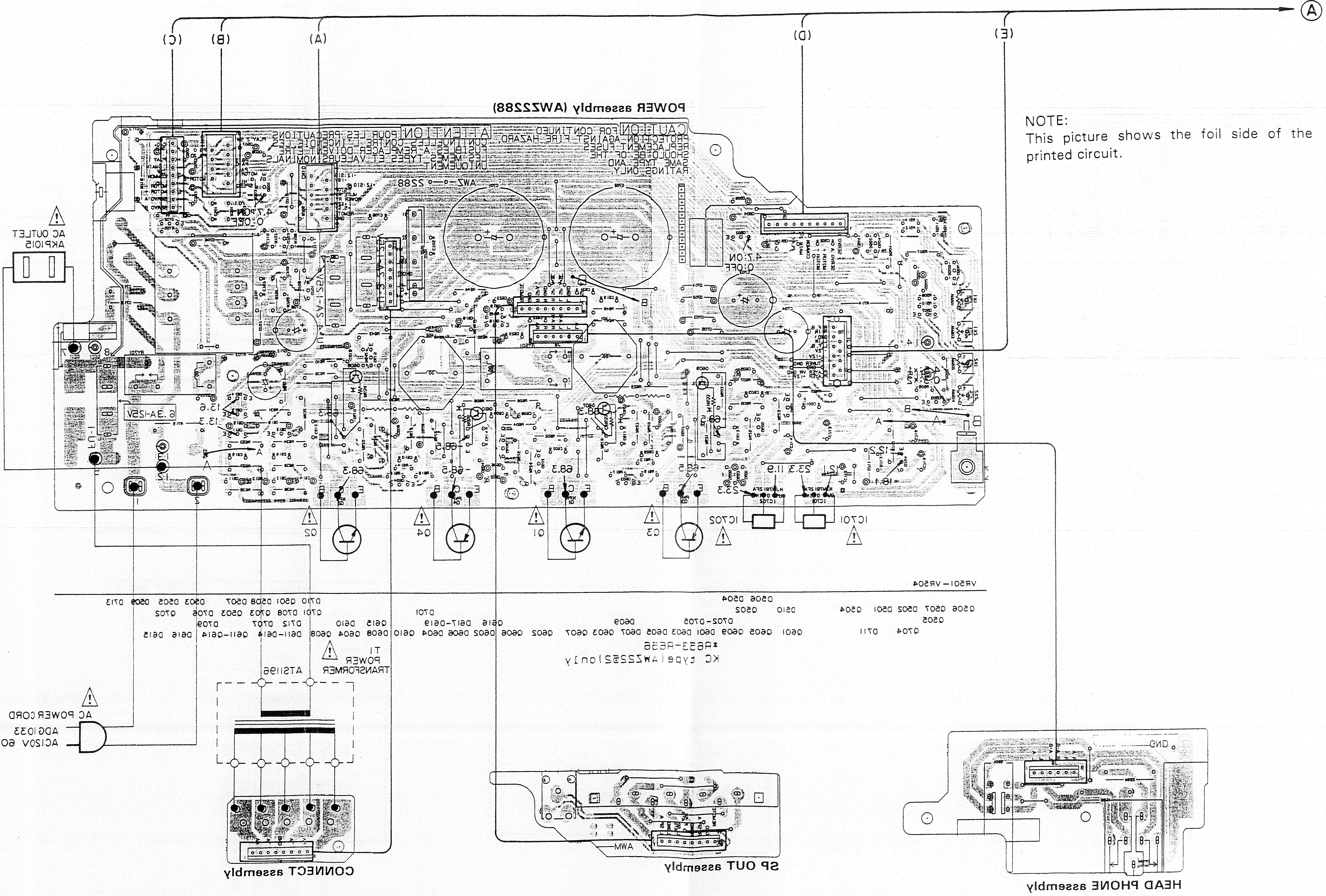
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
E Q504	E or E	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Capacitor (Polarity)
C518		Capacitor (Non-polarity)

Others

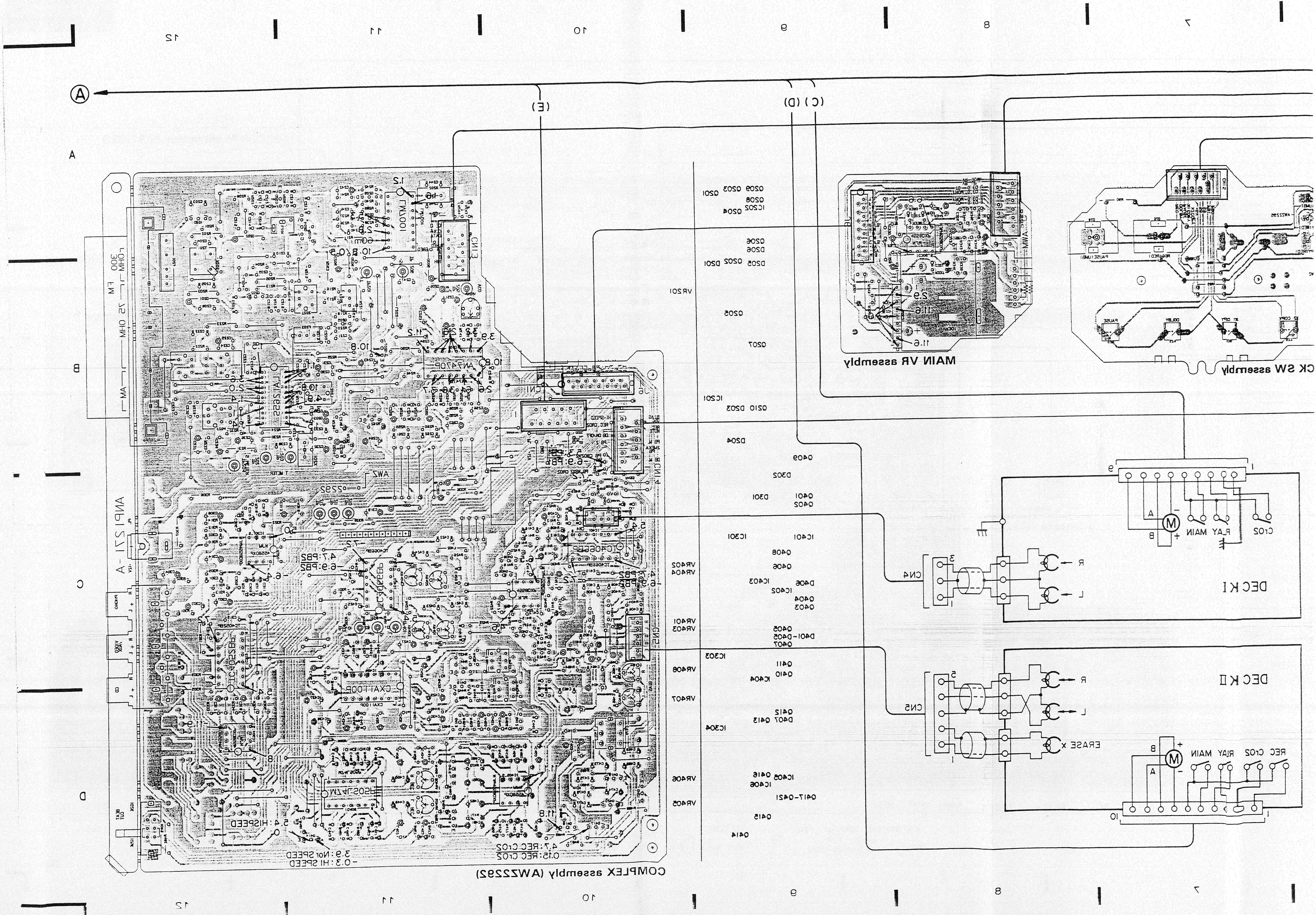
P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

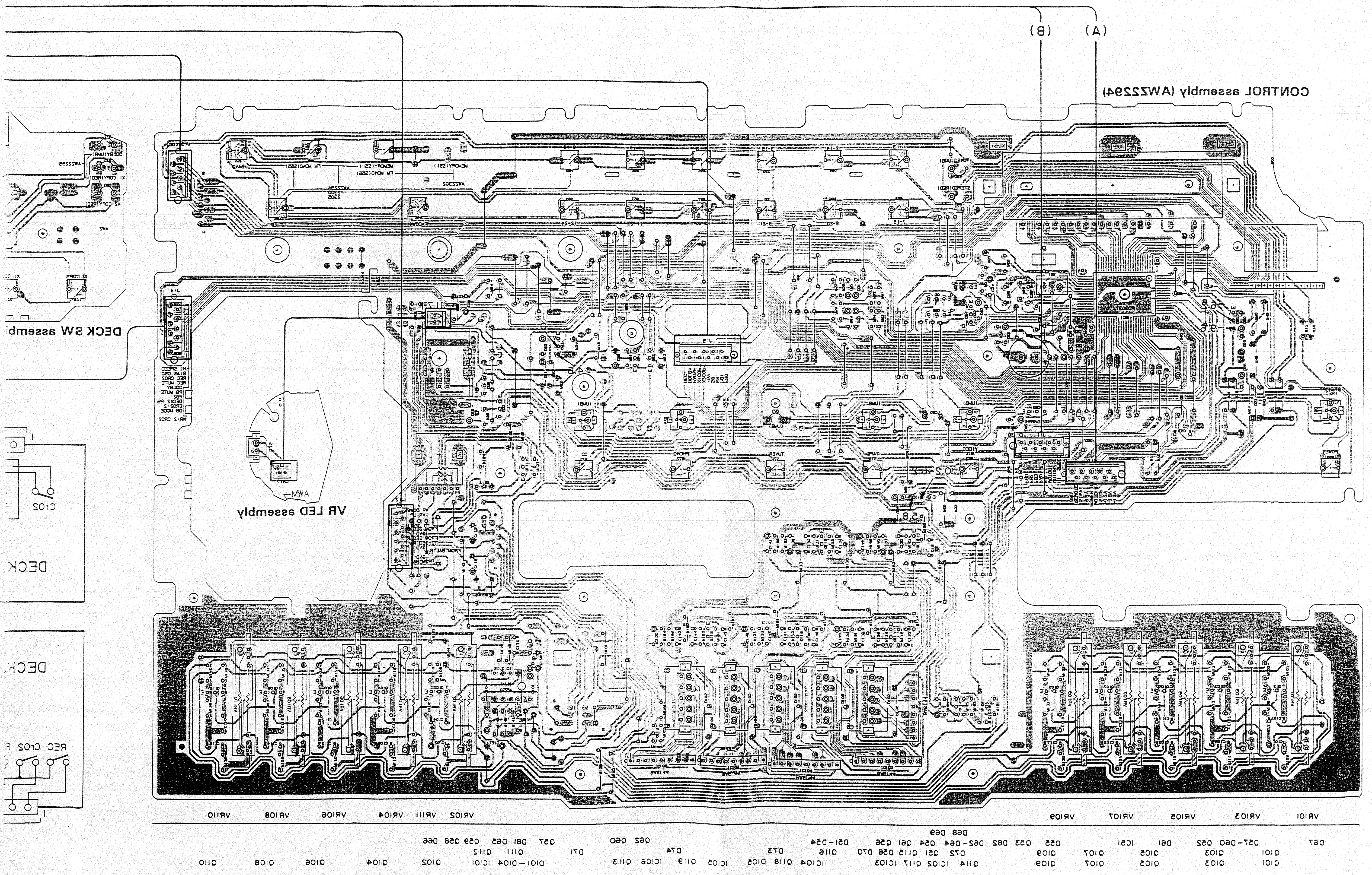
3. The capactor terminal marked with ◎ (double circles) shows negatine termianl.
4. The diode terminal marked with ◎ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.


1
2
3
4
5
6
A
B
C
D
Ⓐ
(E)
(D)
(A)
(B)
(C)
POWER assembly (AWZ2288)
CAUTION FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACEMENT FUSES SHOULD BE OF THE SAME TYPE AND RATINGS ONLY.
ATTENTION POUR LES PRECAUTIONS CONTINUELLES CONTRE L'INCENDIE,LES FUSIBLES A REMPLACER DOIVENT ETRE LES MEMES TYPES ET VALEURS NOMINALS UNIQUEMENT
AWZ 2288
C702
C701
4.7:ON
0:OFF
12:SIG
-18V
STOP
MUTE RY
POWER RY
+12V
+5.6V
REMOTE
GND
CN10
PLAY 2 SW
PLAY 1
MAIN
COMMON
MOTOR
SERVO
HI SPEED
2A-125V
6.3A-125V
FU-1
RY701
13.6
13.3
12.2
12.1
23.3
11.9
-18
-68.5
68.3
68.5
-68.5
68.3
-68.3
NJM7812FA
NJM7812FA
IC701
IC702
Q3
Q1
Q4
Q2
E
C
B
AC OUTLET
AKP1015
VR501 — VR504
Q506 Q507 D502 D501 Q504
Q505
Q704 D711
D506 D504
D510 Q502
D702—D705
D609
Q601 Q605 Q609 D601 D603 D605 D607 Q603 Q607
Q602 Q606
Q616 D617—D619
D701
D602 D606 D604 Q610
Q615 D610
D608 Q604 Q608
D710 Q501 D508 D507
Q701 D708 Q703 Q503 D706
D712 D707
D611—D614
D503 D505 D509 D713
Q702
D709
Q611—Q614 D616 D615
*R653—R656
KC type(AWZ2252)only
T1
POWER
TRANSFORMER
ATS1196
AC POWER CORD
ADG1033
AC120V 60Hz
GND
HEAD PHONE assembly
SP OUT assembly
AWM
CONNECT assembly


6
5
4
3
2
1
A
B
C
D
(A)
(B)
(C)
(D)
(E)
POWER assembly (AWZ2288)
CAUTION FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACEMENT FUSES SHOULD BE OF THE SAME TYPE AND RATINGS ONLY
ATTENTION POUR LES PRECAUTIONS CONTINUELLES CONTRE L'INCENDIE, LES FUSIBLES A REMPLACER DOIVENT ETRE LES MEMES TYPES ET VALEURS NOMINALS UNIQUEMENT.
AC OUTLET
AKP1015
Q1
Q2
Q3
Q4
IC701
IC702
VR501—VR504
*R653—R656
KC type(AWZ2252)only
T1
POWER
TRANSFORMER
ATS1161
AC POWER CORD
ADG1033
AC120V 60Hz
CONNECT assembly
SP OUT assembly
AWA
HEAD PHONE assembly
GND

NOTE:
This picture shows the foil side of the printed circuit.


12
11
10
9
8
7
A
B
C
D
Ⓐ
(E)
(D)
(C)
COMPLEX assembly (AWZ2292)
ANP1271-A
MAIN VR assembly
CK SW assembly
AWZ2292
CN11
CN13
CN14
CN15
CN16
FM 300 OHM
75 OHM
AM
LA1265S
AN7470P
CXA1100P
LC4066BP
HA12134A
3.9 : Nor SPEED
-0.3 : HI SPEED
4.7 : REC CrO2
0.15 : REC CrO2
5.4 : HI SPEED
4.7 : PB2
6.9 : PB2
DECK I
DECK II
CN4
CN5
R
L
ERASE
M
A
B
MAIN
PLAY
CrO2
REC
PAUSE
DOLBY
COPY
IC201
IC202
IC301
IC303
IC304
IC401
IC402
IC403
IC404
IC405
IC406
VR201
VR401
VR402
VR403
VR404
VR405
VR406
VR407
VR408
D201
D202
D203
D204
D205
D206
D301
D302
D401-D405
D406
D407
Q201
Q202
Q203
Q204
Q205
Q206
Q207
Q208
Q209
Q210
Q401
Q402
Q403
Q404
Q405
Q406
Q407
Q408
Q409
Q410
Q411
Q412
Q413
Q414
Q415
Q416
Q417-Q421
1
9
1
10
3
1
5
1


(A)
(B)
CONTROL assembly (AWZ2294)
DECK SW assembly
VR LED assembly
DECK
REC
VR101
VR103
VR105
VR107
VR109
VR102
VR111
VR104
VR106
VR108
VR110
D68 D69
1
2
3
4
5
6
A
B
C
D

6. ELECTRICAL PARTS LIST

NOTES:
- *Parts without part number cannot be supplied.*
- *Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω 56 × 10¹ 561........................RD1/4PS[5][6][1] J
47kΩ 47 × 10³ 473........................RD1/4PS[4][7][3] J
0.5Ω 0R5.................................RN2H[0][R][5] K
1Ω 010.................................RS1P[0][1][0] K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ 562 × 10¹ 5621......................RN1/4SR[5][6][2][1] F

Miscellaneous parts

P.C.BOARD ASSEMBLIES

Mark	Symbol & Description	Part No.
	Power assembly	AWZ2288
	Head phone assembly	
	SP Out assembly	
	Connect assembly	
	Complex assembly	AWZ2292
	Main VR assembly	
	Control assembly	AWZ2294
	DECK SW assembly	
	VR LED assembly	
	Pattern assembly	
⚠	IC701,IC702 Regulator IC	NJM7812FA
⚠	Q3,Q4 Transistor	2SA1302
⚠	Q1,Q2 Transistor	2SC3281
⚠	T1 Power transformer (AC120V)	ATS1196
⚠	AC Outlet (1P)	AKP1015
⚠	FU2,FU3 Small type fuse (2A/125V)	AEK−122
⚠	FU1 Fuse (6.3A/125V)	AEK−309
⚠	AC Power cord	ADG1033
	Strain relief	AEP−113
	Leaf switch (MOTOR)	AZN1509
	Leaf switch (MUTE)	AZS1060
	Leaf switch (CrO2)	AZS1061
	Leaf switch (REC)	AZS1062
	Motor assembly	AZX1021
	R/P Head	AZP1036
	E Head	AZP1025

POWER assembly (AWZ2288)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	Q501,Q502	RN1201
	Q505	RN1203
	Q506,Q507,Q615	2SA1048
	Q609,Q610	2SA1306
	Q503,Q504,Q704	2SA1515
	Q601,Q602	2SA970
	Q611,Q612	2SC2240
	Q613,Q614,Q702,Q703	2SC2458
	Q603,Q604	2SC2603
	Q605,Q606	2SC2705
	Q607,Q608	2SC3298
	Q701	2SC3377
	Q616	2SD438
	D701	D5SB20F
	D617	HZS12BL
	D702−D705,D707	S5566
	D711 Zener diode	UZ−13BS
	D708,D509,D510 Zener diode	UZ−6.2BS
	D501−D508,D601−D616,D618, D619,D706,D709,D710,D712, D713	1SS252

COILS & TRANSFORMER

Mark	Symbol & Description	Part No.
	L601,L602 AF Choke coil	ATH1004
⚠	T701 Power transformer	ATT1011

RELAIES

Mark	Symbol & Description	Part No.
	RY601	ASR−109
	RY701	ASR1024

CAPACITORS

Mark	Symbol & Description	Part No.
⚠	C717,C718 (0.01μF/AC125V)	ACG1003
⚠	C705−C707 (0.01μF/AC150V)	ACG1005
	C605,C606 (47p)	ACG1016
	C701,702 (8200/71)	ACH1071
	C611−614	CCCSL101K500
	C601,C602	CCMSL100D50
	C603,C604	CCMSL680J50
	C615,C616	CEANP010M50
	C623	CEASO10M100
	C710	CEASO10M50
	C714	CEAS100M25
	C708	CEAS102M16
	C704	CEAS102M25
	C503,C504,C709	CEAS330M16
	C703	CEAS332M25
	C618	CEAS4R7M50
	C711,C715,C716	CEAS470M16
	C712,C713	CEAS470M25
	C607,C608	CEAS470M50
	C617	CEAS471M6
●	C619−C622	CFTXA823J50
	C609,C610	CKCYB472K50
	C501,C502	CKDYF473Z50

RESISTORS

Mark	Symbol & Description	Part No.
	VR503,VR504 (10k)	VRTM6H103
	VR501,VR502 (50k)	VRTM6H503
	R629,R630 (0.22μF)	ACN−146
⚠	R715 (2.2M)	ACN−208
⚠	R649,R650,R716	RD1/2PMF□□□J
⚠	R631−R634,R701,R703,R712	RD1/4PMF□□□J
	R601,R602,R605−R612, R619−R624,R635−R641,R643, R644	RD1/4PM□□□J
⚠	R625−R628,R647,R648,R603, R604	RFA1/4PS□□□J
	R646,R714	RS2LMF□□□J
	Other resistors	RD1/8PM□□□J

HEAD PHONE assembly

SWITCH

Mark	Symbol & Description	Part No.
	S601 Push switch (SPEAKERS)	ASG−413

RESISTORS

Mark	Symbol & Description	Part No.
	R651,R652	RS2LMF471J

OTHERS

Mark	Symbol & Description	Part No.
	Jack (HEAD PHONE)	AKN1010

SP OUT assembly

OTHERS

Mark	Symbol & Description	Part No.
	Terminal 8P (SPEAKER)	AKE−111
	Mini jack (REMOTE OUT)	AKN−207

CONNECT assembly

No parts are supplied with the CONNECT assembly.

COMPLEX assembly (AWZ2292)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC203	AN7470P
	IC404	CXA1100P
	IC201	LA1265S
	IC202	LM7001
	IC406	M74LS05P
	IC301,IC304,IC402,IC405	NJM4558DXP
	IC303	TC4052BP
	IC401,IC403	TC4066BP
	Q210	JC501
	Q417	RN1201
	Q409,Q414	RN1203
	Q206,Q207	RN2201
	Q418	2SA1048
	Q208	2SC1740SLN
	Q401,Q402,Q405−Q408, Q410−Q413,Q415,Q416,Q421	2SC2458
	Q203,Q205	2SC2668
	Q202	2SC2786
	Q419,Q420	2SC3377
	Q204	2SK161
	Q201	2SK241
	Q209	2SK246
	Q403,Q404	2SK373
	D201,D202	ITT310
	D301 Zener diode	UZ−5.1BS
	D302 Zener diode	UZ−7.5BS
	D203−D206,D401−D407	1SS252

COILS & TRANSFORMERS

Mark	Symbol & Description	Part No.
	X202 Crystal resonator	ASS1005
	X201 Ceramic resonator	ATF−125
	T201 FM RF transformer	ATC−194
	T202 FM Coupling transformer	ATE−063
	T401 Bias OSC transformer	ATX1007
	L201 FM Coil	ATC1003
	L202 FM Detector coil	ATE−079
	L203,L204 Axial inductor (2.2μH)	LAU2R2M
	L403 Axial inductor (22μH)	LAU220K
	L401,L402 Axial inductor (220μH)	LAU221K
	L406,L407 Inductor (3.9mH)	LTA392J
	L404,L405 Inductor (8.2mH)	LTA822J
	F202,F203 FM Ceramic filter	ATF−107
	F201 FM Band pass filter	ATF−155
	F204 AM Ceramic filter	ATF−208
	F401,F402 Dolby filter	ATF−210

SWITCH

Mark	Symbol & Description	Part No.
	S401 Slide switch (BEAT CUT)	ASH1009

CAPACITORS

Mark	Symbol & Description	Part No.
	C470 (560p/630)	ACE1021
	C250 (470p)	ACE1039
	C226 (47p)	ACG1016
	C209,C227,C246,C305,C306, C413,C414,C482 (100p)	ACG1017
	C215 (1000p)	ACG1020
	C204,C208,C211,C218−C220, C235,C241,C247,C315,C316, C409,C410,C425,C426 (0.01μF)	ACG1021
	C221,C223,C224,C228−C230, C254 (0.022μF)	ACG1022
	C465,C466	CCCSL101K500
	C401−C404	CCCSL181J50
	C463,C464	CCCSL271K500
	C210	CCDCH010C50
	C207	CCDCH020C50
	C205	CCDRH180J50
	C477	CCDSL221J50
	C233	CCDSL271J50
	C216	CCDTH150J50
	C203	CCMCH040C50
	C214	CCMCH080D50
	C213,C217,C244,C245	CCMCH150J50
	C212	CCMCH330J50
	C405,C406	CCMSL100D50
	C248	CEANP2R2M50
	C253	CEASR22M50
	C457,C458	CEASR33M50
	C459,C460	CEASR47M50
	C433,C434	CEASR68M50
	C255	CEAS0R1M50
	C232,C411,C412	CEAS010M50
	C242,C252	CEAS1R5M50
	C243,C432	CEAS101M16
	C237,C259,C260,C303,C304, C317,C318,C427−C430, C435−C438,C480,C481	CEAS2R2M50
	C439,C440	CEAS220M16
	C251	CEAS3R3M50
	C206,C225,C231,C256,C263, C313,C314,C451−C454,C478, C479	CEAS330M16
	C234	CEAS4R7M50
	C236,C264,C307,C308,C319, C320,C417,C418,C431,C471, C472	CEAS470M16
	C421,C422	CFTXA103J50
	C222,C240,C423,C424	CFTXA104J50
	C449,C450	CFTXA123J50
	C473	CFTXA153J50
	C447,C448	CFTXA223J50
	C445,C446	CFTXA473J50
	C468	CKCYB182K50
	C469	CKCYB222K500
	C475,C476	CKCYB472K50
	C261,C262,C474	CKCYB682K50
	C311,C312,C443,C444	CKCYB822K50
	C249,C336,C441	CKCYF473Z50
	C419,C420	CKCYX333M25
	C238,C309,C310	CKDYB222K50
	C239,C442	CKDYF473Z50
	C257,C258	CKMYB152K50
	C301,C302,C407,C408	CKMYB391K50
	C461,C462	CKMYB681K50
	C455,C456	CQMA562K50
	C415,C416	CQMA682J50

RESISTORS

Mark	Symbol & Description	Part No.
	VR201 (4.7k)	ACP1024
	VR401−VR404 (10k)	VRTM6V103
	VR405,VR406 (20k)	VRTM6V203
	VR407,VR408 (500k)	VRTM6V504
	R307,R308	RD1/2PMF100J
	R335,R482,R485	RD1/2PM☐☐☐J
	R263,R336	RD1/4PM☐☐☐J
	Other resistors	RD1/8PM☐☐☐J

OTHERS

Mark	Symbol & Description	Part No.
	Terminal 4P (ANTENNA)	AKA1009
	Pin Jack 6P (PHONO,VIDEO/ AUX,CD)	AKB1023
	DC Jack (PLAYER +12V)	AKN−203
	AMRF tuning block	AXX1011

MAIN VR assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC306	NJM4558DXP
	IC305	TA7291S

CAPACITORS

Mark	Symbol & Description	Part No.
	C325,C326 (47p)	ACG1016
	C321,C322	CCMSL330J50
	C327,C328	CEAS2R2M50
	C323,C324	CEAS221M10
	C329,C330	CEAS470M16
	C331	CKCYF473Z50

RESISTORS

Mark	Symbol & Description	Part No.
	VR301 (100k)	ACX1023
	R351	RD1/2PM330J
	Others resistors	RD1/8PM☐☐☐J

CONTROL assembly (AWZ2294)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC102−IC106	BA6144
	IC101	NJM4558DXP
	IC51	PDG037
	Q55,Q56,Q59,Q61,Q62	RN1201
	Q58	RN2201
	Q53,Q57	2SA1048
	Q51,Q54,Q60,Q101−Q110, Q113−Q119	2SC2458
	Q111,Q112	2SC2878
	Q52	2SD438
	D105 LED assembly	AEL1044
	D67,D68 LED	AEL1075
	D69−D74 LED	AEL1077
	D57 Zener diode	UZ−10BS
	D56 Zener diode	UZ−5.6BS
	D62	1SS145
	D51−D55,D58−D61,D63−D66, D81,D82,D101−D104	1SS252

SWITCHES

Mark	Symbol & Description	Part No.
	S51−S73 Tact switch	ASG1029

COILS

Mark	Symbol & Description	Part No.
	X51 Ceramic resonator	ASS1025
	L51 Axial inductor (33μH)	LAU330K

CAPACITORS

Mark	Symbol & Description	Part No.
	C119,C120 (470p)	ACG1019
	C115,C116 (1000p)	ACG1020
	C107,C108 (0.01μF)	ACG1021
	C142 (0.022μF)	ACG1022
	C51 (0.047μF/5.5)	ACH1070
	C136	CEASR22M50
	C101,C102,C133	CEASR33M50
	C58	CEAS010M50
	C146−C150	CEAS100M25
	C127	CEAS101M16
	C125,C126	CEAS2R2M50
	C59	CEAS220M16
	C54,C60,C130	CEAS330M16
	C52	CEAS470M10
	C128	CEAS470M16
	C105,C106	CFTXA124J50
	C140,C141	CKCY8272K50
	C145	CKCYB332K50
	C137,C138	CKCYB682K50
	C143,C144	CKCYB821K50
	C53,C57,C129	CKCYF473Z50
	C134,C135	CKCYX183M25
	C139	CKCYX333M25
	C131,C132	CKCYX473M25
	C117,C118	CKDY8332K50
	C111,C112	CKDYB392K50
	C55,C56	CKDYX104M25
	C113,C114	CKDYX153M25
	C103,C104,C109,C110	CKDYX393M25
	C121,C122	CKMYB221K50

RESISTORS

Mark	Symbol & Description	Part No.
	VR111 (250k×2−B)	ACS1034
	VR101−VR110 (100k)	ACU1032
	R47−R50	RD1/2PM120J
	R59,R60,R100,R196−R199	RD1/4PM☐☐☐J
	R64	RS2LMF390J
	Other resistors	RD1/8PM☐☐☐J

OTHERS

Mark	Symbol & Description	Part No.
	V51 Fluorescent indicator tube	AAV−039
	2P Wire assembly	ADX1190
	REMOTE CONTROL SENCOR assembly	AXX1010

DECK SW assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	D76 LED assembly	AEL1038
	D78 LED assembly	AEL1039
	D79,D80 LED	AEL1075
	D77 LED	AEL1077

SWITCHES

Mark	Symbol & Description	Part No.
	S74−S77 Tact switch	ASG1029

RESISTORS

Mark	Symbol & Description	Part No.
	All resistors	RD1/8PM☐☐☐J

VR LED assembly

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
	D75 LED assembly	AEL1040

PATTERN assembly

No parts are supplied with the PATTERN assembly.

7. ADJUSTMENTS

7.1 TAPE DECK SECTION

7.1.1 Mechanical adjustments

- **Adjustment point are as shown in Fig. 7-1**

1. Connect the frequency counter to the TP401 terminal (Dolby TP: Lch) on the complex assembly.
2. Turn the tape switch on.
3. Mount the test tape STD-301 onto deck Ⅰ.
4. Short circuit between terminals TP14 and TP15 on the complex assembly and put the deck Ⅰ into play mode. (STD-301 is play backed in double speed.)
5. Adjust with VR503 so that the playback signal freqency of deck Ⅰ becomes 6020Hz ±20Hz.
6. Release the short circuit between terminals TP14 and TP15.
7. Put the deck Ⅰ into play mode and adjust with VR501 so that the playback signal frequency becomes 3010Hz ±10Hz.
   (Note 1: Be sure not to turn VR503 while performing the normal speed adjustment.)
   (Note 2: Be sure to first perform double speed adjustment in both Decks Ⅰ and Ⅱ.)
8. At this point, be sure to confirm that wow and flutter are within 0.3% both in the double and normal speeds.
9. Mount the test tape STD-301 onto deck Ⅱ.
10. Short circuit between terminals TP14 and TP15 on the complex assembly A and put the deck Ⅱ into play mode. (STD-301 is play backed in double speed.)
11. Adjust with VR504 so that the playback signal freqency of deck Ⅱ becomes 6020Hz ±20Hz against that of deck Ⅰ.
12. Release the short-circuit between terminals TP14 and TP15.
13. Put the deck Ⅱ into play mode and adjust with VR502 so that the playback signal frequency of deck Ⅱ becomes 3010Hz ±10Hz against that of deck Ⅰ.
    (Note: Be sure not to turn VR504 while performing the normal speed adjustment.)
14. At this point, be sure to confirm that the wow and flutter within 0.3% both in the double and normal speeds.

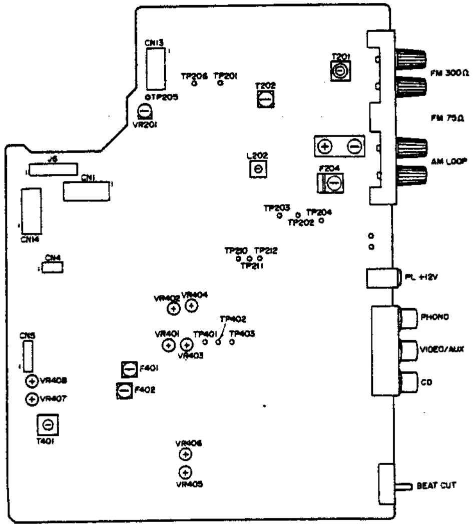

CN13
TP206
TP201
TP205
VR201
T202
T201
FM 300Ω
FM 75Ω
AM LOOP
J6
CN1
L202
F204
CN14
TP203
TP204
TP202
TP210
TP212
TP211
CN4
PL +12V
VR402
VR404
PHONO
TP402
VR401
TP401
TP403
VR403
VIDEO/AUX
CN5
F401
CD
VR408
F402
VR407
T401
VR406
VR405
BEAT CUT

Fig. 7-1 Adjustments point

7.1.2 Electrical adjustments

Adjustment Conditions

1. The mechanical adjustments must be completed first.
2. The head must be cleaned and demagntetized.
3. Turn power on allow the deck to warm up for at least a few minutes before commencing any electrical adjustments.
4. The reference signal is 0dBv=1Vrms.
5. Connect a 50 kilo-ohm (or between 47 to 52 kilo-ohm) load resistance to the OUTPUT terminals.
6. Unless otherwize specified, the switches listed below are left in the positions indicated.
   DOLBY NR :OFF
   TAPE SELECTOR :NORM

Test Tapes

STD-331B	:Playback adjustments (See Fig. 7-2)
STD-608A	:NORMAL blank tape
STD-620	:CrO$_2$ blank tape
STD-610	:METAL blank tape

List of Adjustments

PLAYBACK SECTION
1. Head azimuth adjustment.
2. Playback level adjustment.

RECORDING SECTION
1. Recording sections
2. Recording level adjustment.

NOTE: This unit has an automatic tape selection feature.

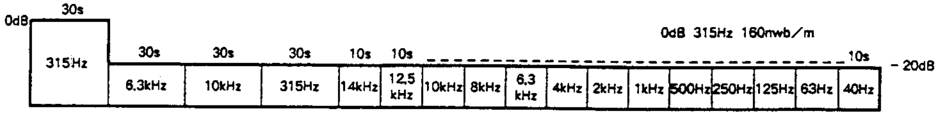

0dB
30s
315Hz
30s
6.3kHz
30s
10kHz
30s
315Hz
10s
14kHz
10s
12.5 kHz
10kHz
8kHz
6.3 kHz
4kHz
2kHz
1kHz
500Hz
250Hz
125Hz
63Hz
40Hz
0dB 315Hz 160nwb/m
10s
-20dB

Fig. 7-2 Constants of the test tape STD-331B

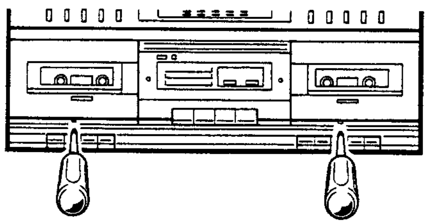


Fig. 7-3 Head azimuth adjustment

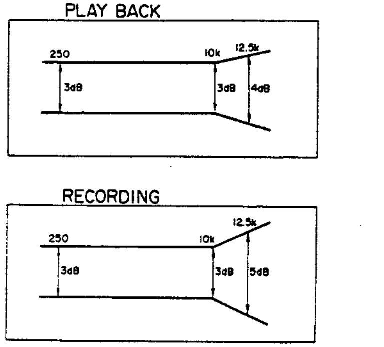


Fig. 7-4 Frequency response

DECK (PLAYBACK SECTION)

1. Head Azimuth Adjustment

- Turn VR, (Deck Ⅰ) or VR, (Deck Ⅱ) to mechanical center positions.

NO	Mode	Input signal & test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1.	PLAY	Play the 10kHz/−20dB section of STD-331B test tape.	Head azimuth adjustment screw. (See Fig. 7-3)	TP401 (L) TP403 (R)	Maximum playback signal level.	
2.	STOP	Lock the screw with scrwe lock after completing adjustment.				

2. Playback level Adjustment

- This adjustment determines the DOLBY NR level, and must be performed with great care.

NO	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	PLAY	Play the 315Hz/0dB section of the STD-331B test tape.	Deck Ⅰ	VR403 (Lch) VR404 (Rch)	TP.401 (Lch) TP.403 (Rch)	−5.2 dBv ±0.5 dBv	Adjust the playback level first at DESK Ⅰ, and then at DECK Ⅱ.
			Deck Ⅱ	VR401 (Lch) VR402 (Rch)			

DECK (RECORDING SECTION)

1. Recording Bias Adjustment

- After the adjustment, caution should be exercised so as not to become under bias by checking the distortion rate.

NO	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	STOP	Set the TAPE SELECTOR switch to the NORM position.					
2.	REC	STD-630 (NORM) −20dB	Deck Ⅱ	VR407 (Lch) VR408 (Rch)	LINE OUT TP401 TP403	0dB ±0.5dB (10kHz/315Hz)	

2. Recording Level Adjustment

NO	Mode	Input signal & test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1.	STOP	Set the TAPE SELECTOR switch to the NORM position.					
2.	REC PAUSE	Apply a 315Hz/0dBv signal to the Line Input terminals.	Rec Level contorol		TP.401 (Lch) TP.403 (Rch)	−5.2 dBv	
3.		Set the DOLBY NR swtich to the ON position. (DOLBY B)					
4.	REC/PLAY	Record the above signal onto the STD-630 test tape, and playback.	Deck Ⅱ	VR405 (Lch) VR406 (Lch)	TP.401 (Lch) TP.402 (Rch)	−5.2dBv ±0.5dB	
5.	STOP	Set the TAPE SELECTOR switch to the CrO_2 position.					
6.	REC/PLAY	Record the above signal onto the STD-620 test tape, and playback.	Confirm		TP.401 (Lch) TP.402 (Rch)	−4.5dBV ±2dB	
7.	STOP	Set the TAPE SELECTOR switch to the METAL position.					

7.2 TUNER SECTION

7.2.1 FM (MONO) Tuner adjustment

- Adjustment point are as shown in Fig. 7−1
- Make the wire connections as shown in Fig. 7−5
- Set the function to FM (MONO)

FM MONO

Item	Adjustment location	Measuring location	Adjustment value	Conditions
Sensivity adjustment	T201	TP210 TP212	Max. voltage	Lebel at which the standard modulation of 98MHz does not saturats voltage of TP3
Tuning voltage check at 8.75 MHz	——	TP201	3.5V ±1.5V	——
Tuning voltage check at 108 MHz	——	TP201	8.7V $^{+1.3V}_{-2V}$	——
T METER adjustment	L202	TP202 TP203	Voltage 0V difference ±10mV	Standard modulation at 98MHz 60dB

7.2.2 FM (STEREO) Tuner asjustment

- Adjustment point are as shown in Fig. 7−1
- Make the wire connections as shown in Fig. 7−5
- Set the function to FM (STEREO)

FM STEREO

Item	Adjustment location	Measuring location	Adjustment value	Conditions
MPX VCO Adjustment	VR201	TP205	76kHz ±100Hz	Non modulation at 98MHz 80dBμV
Confirmation of distortion factor check	———	TP210, TP212	1.5% or less	Stereo modulation at 98MHz 60dBμV
Distortion factor adjustment ※	T202	TP210, TP212	Min. distortion	Stereo modulation at 98MHz 60dBμV

※ Perform the above adjustment only when the distortion factor check exceeds 1.5%.

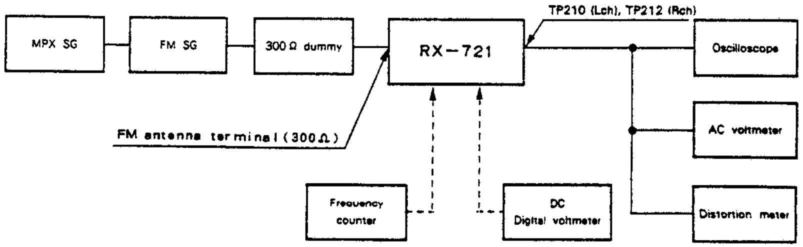


Fig. 7−5 FM adjustment wiring diagram

7.2.3 AM Tuner adjustment

- Adjustment point are as shown in Fig. 7−1
- Make the wire connections as shown in Fig. 7−6
- Set the function to AM

AM

Item	Adjustment location	Measuring location	Adjustment value	Conditions
TURND IND lighting level adjustment	R232	※ CN "TUNED"	60dBμV/m or less	Standard modulation at 1000 kHz.

※10kΩ are applied to the "TUNED" terminal (+B = 5V). TUNED IND lights up at "L" level.

NOTE: Separate the R232 if out of specification.

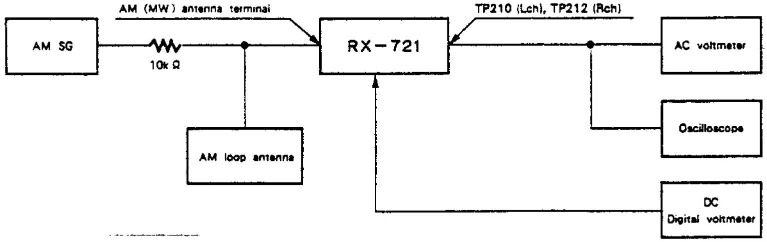
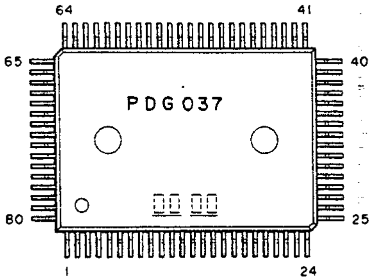

AM SG
10k Ω
AM (MW) antenna terminal
AM loop antenna
RX−721
TP210 (Lch), TP212 (Rch)
AC voltmeter
Oscilloscope
DC
Digital voltmeter

Fig. 7−6 AM adjustment wiring diagram

8. IC INFORMATION

<PDG037> SYSTEM CONTROL MICROCOMPUTER



1. Terminal Functions

No.	Name	I/O	P style	Function	LOGIC
1	S4/PG0	O	P	PB Nr × 2, CrO$_2$	H: CrO$_2$ playback or high speed copy with tape transport unit 1 = normal
2	S5/PG1	O	P	PB CrO$_2$ × 2	H: high speed copy with tape transport unit 1 = CrO$_2$
3	S6/PG2	O	P	tape transport unit 2 PLAY/REC	L: tape transport unit 2 = REC H: tape transport unit 2 = PLAY
4	S7/PG3	O	P	PLAY selection from tape transport units 1 and 2	L: tape transport unit 1 = PLAY H: tape transport unit 2 = PLAY
5	S8	O	P	Key output	
6	S9	O	P	Key output	
7	S10	O	P	Key output	
8	S11	O	P	Key output	
9	S12	O	P	Key output	
10	S13	O	P	Key output	
11	S14	O	P	Key output	
12	S15	O	P	Key output	
13	S16/T15	O	DP	FL segment a	
14	S17/T14	O	DP	FL segment b	
15	S18/T13	O	DP	FL segment c	
16	S19/T12	O	DP	FL segment d	
17	S20/T11	O	DP	FL segment e	
18	S21/T10	O	DP	FL segment f	
19	S22/T9	O	DP	FL segment g	
20	S23/T8	O	DP	FL segment h	
21	T7	O	DP	Unused (open)	
22	T6	O	DP	Unused (open)	
23	T5	O	DP	FL grid 1	
24	T4	O	DP	FL grid 2	
25	T3	O	DP	FL grid 3	
26	T2	O	DP	FL grid 4	
27	T1	O	DP	FL grid 5	
28	T0	O	DP	FL grid 6	
29	INT	I	C	switchover	L: MW9kHz, FM50kHz H: MW10kHz, FM100kHz
30	XTAL	O	C	Clock pulse output	
31	EXTAL	I	C	Clock pulse input	
32	$\overline{\text{RST}}$	I	C	Reset	L: Reset
33	NC	—	—	—	
34	V$_{DD}$	I	—	Supply voltage	
35	PI0/AD0	O	C	VIDEO	H: FUNC = VIDEO
36	PI1/AD1	O	C	TUNER	H: FUNC = TUNER
37	PI2/AD2	O	C	DOLBY IND	H: DOLBY IND light up = DOLBY ON
38	PI3/AD3	O	C	SW INH	H: Scanning in progress with FUNC = TAPE or FUNC = TUNER
39	PB0/AD4	I	C	Key input 0	
40	PB1/AD5	I	C	Key input 1	
41	PB2/AD6	I	C	Key input 2	
42	PB3/AD7	I	C	Key input 3	
43	NC	—	—	—	
44	PX0/$\overline{\text{SC}}$	O	C	Serial clock pulse output	
45	PX1/SO	O	C	Serial data output	
46	PX2/SI	I	C	Auto stop input	L: Auto tuning stop
47	PA0	O	C	Deck SW output 0	
48	PA1	O	C	Deck SW output 1	
49	PA2	O	C	REC IND	L: REC IND light up
50	PA3	O	C	REC CrO$_2$	H: Tape transport unit 2 = CrO$_2$
51	PF0	O	C	POWER Relay	H: Relay ON
52	PF1	O	C	LM7001 CE	H: Enable.
53	PF2	O	C	Function SW control A	H: FUNC = PHONO or FUNC = TUNER
54	PF3	O	C	BIAS OSC	H: ON = BIAS OSC
55	PE0	O	C	DOLBY MODE	L: DOLBY ON
56	PE1	O	C	MOTOR 1	H: tape transport unit 1 MOTOR ON
57	PE2	O	C	MOTOR 2	H: tape transport unit 2 MOTOR ON
58	PE3	O	C	TAPE SPEED	L: High speed copy in progress
59	PY0	O	C	VOLUME DOWN	H: Motor volume DOWN
60	PY1/$\overline{\text{PWM}}$	O	C	VOLUME UP	H: Motor volume UP
61	PY2/WP	I	C	Power failure detection	
62	PY3/$\overline{\text{EC}}$/RMC	I	C	Remote control signal input	
63	PD0	O	C	× 2 COPY IND.	L: × 2 COPY IND light up
64	PD1	O	C	× 1 COPY IND.	L: ON = × 1 COPY IND light up
65	PD2	O	C	PAUSE IND.	L: PAUSE IND light up
66	PD3	O	C	PHONO	L: FUNC = PHONO
67	PC0	O	C	CD	L: FUNK = CD
68	PC1	O	C	VOLUME IND.	L: VOLUME IND light up
69	PC2	O	C	STANDBY IND.	L: STANDBY IND light up
70	PC3	O	C	TAPE	L: FUNC = TAPE
71	Vss	I	—	GND terminal	
72	TX	O	C	Unused	Open
73	NC	—	—	—	
74	TEX	I	C	Unused	Connected to GND
75	V$_{REF}$	I	—	Reset standard voltage	Connected to V$_{DD}$
76	V$_{FDP}$	I	—	Power terminal for FL	
77	S0/PH0	O	P	MUTING	L: MUTING ON (Signal OFF)
78	S1/PH1	O	P	REC MUTE	H: MUTING ON (Signal OFF)
79	S2/PH2	O	P	PB MUTE	L: MUTING ON (Signal OFF)
80	S3/PH3	O	P	PROTECTION RELAY	H: RELAY ON

C: CMOS I/O
P: Pch open drain output
DP: Pch open drain output with pull-down resistor

9. FOR RX-721/KC,RX-521/KU,KC AND RX-721S/KU TYPES

9.1 CONTRAST OF MISCELLANEOUS PARTS

NOTES:
- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

The RX-721/KC,RX-521/KU,KC and RX-721S/KU types are the same as the RX-721/KU type with the exception of the following sections.

Mark	Symbol & Description	Part No.					Remarks
		RX-721/ KU type	RX-721/ KC type	RX-521/ KU type	RX-521/ KC type	RX-721S/ KU type	
⚠	T1 Power transformer (AC120V)	ATS1196	ATS1196	ATS1197	ATS1197	ATS1196	
	Front panel	AMB1462	AMB1462	AMB1483	AMB1483	AMB1462	
	Packing case	AHD1604	AHD1604	AHD1615	AHD1615	AHD1674	
	Remote control unit	AXD1048	AXD1048	AXD1048	AXD1048	AXD1103	
	Operating instructions (French)	....	ARC1153	....	ARC1153	....	
	Operating instructions (English)	....	....	....	....	ARD1010	
	Power assembly	AWZ2288	AWZ2552	AWZ2288	AWZ2552	AWZ2288	

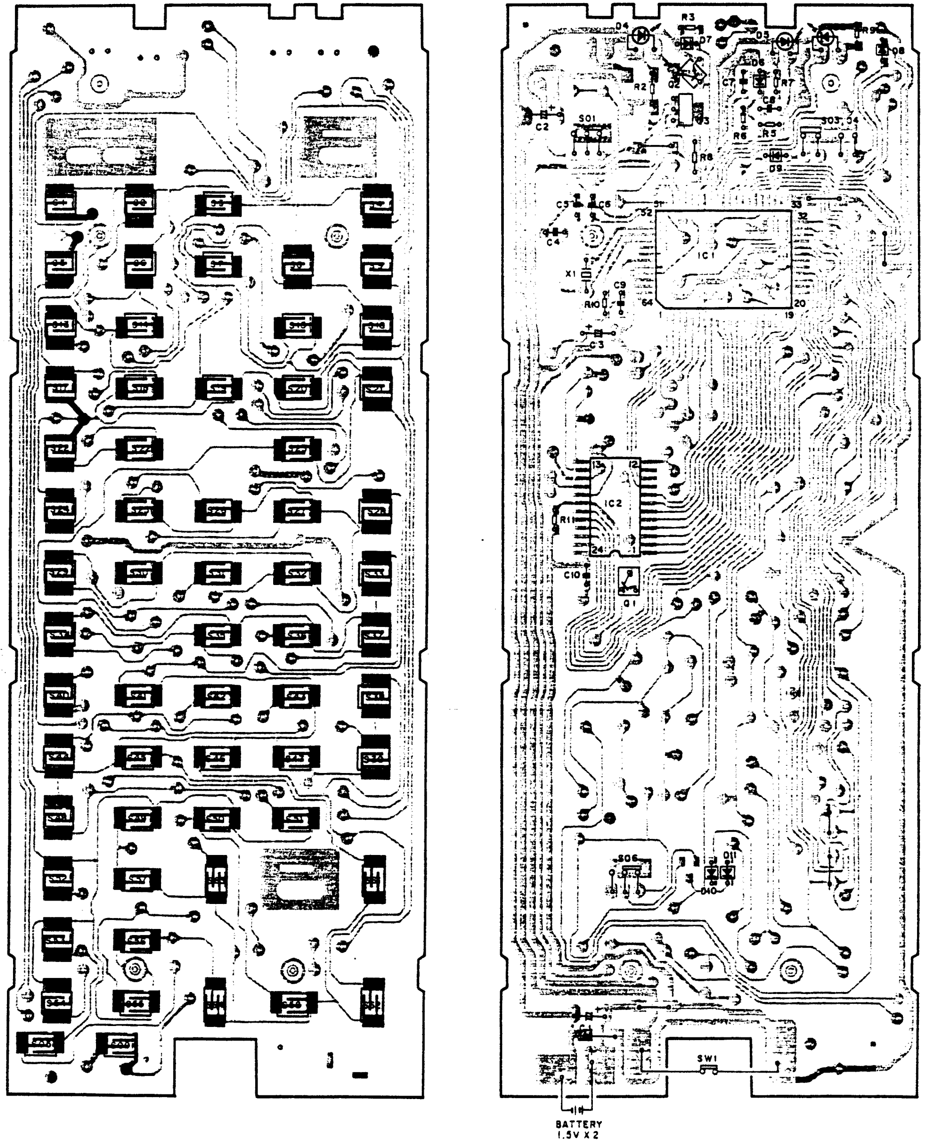
POWER ASSEMBLY (AWZ2552)

The Power assembly (AWZ2552) is the same as the (AWZ2288) with the exception of the following sections.

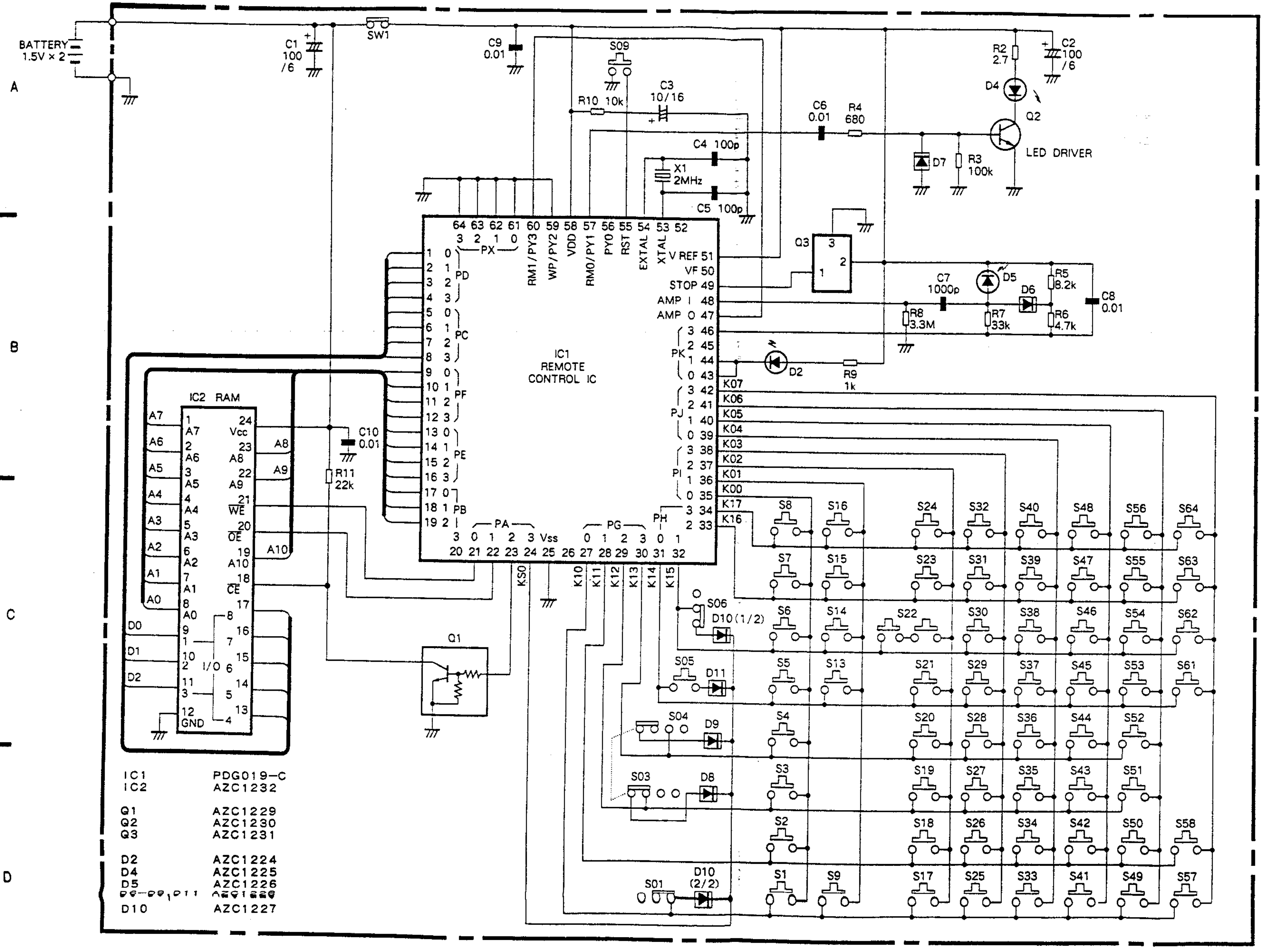
Mark	Symbol & Description	Part No.		Remarks
		AWZ2288	AWZ2552	
⚠	R653−R656	....	FFA1/4PS4R7J	

9.2 REMOTE CONTROL UNIT (AXD1103)

9.2.1 P.C.Board Pattern



9.2.2 Schematic diagram


1
2
3
4
5
A
B
C
D
BATTERY 1.5V × 2
SW1
C1 100 /6
C9 0.01
S09
C3 10/16
R10 10k
C6 0.01
R4 680
C4 100p
X1 2MHz
C5 100p
R2 2.7
C2 100 /6
D4
Q2
LED DRIVER
D7
R3 100k
Q3
C7 1000p
D5
R5 8.2k
D6
C8 0.01
R8 3.3M
R7 33k
R6 4.7k
D2
R9 1k
IC1 REMOTE CONTROL IC
PX
PD
PC
PF
PE
PB
PA
PG
PH
PK
PJ
PI
RM1/PY3
WP/PY2
VDD
RM0/PY1
PY0
RST
EXTAL
XTAL
V REF
VF
STOP
AMP I
AMP O
Vss
K07
K06
K05
K04
K03
K02
K01
K00
K17
K16
KS0
K10
K11
K12
K13
K14
K15
IC2 RAM
A7
A6
A5
A4
A3
A2
A1
A0
Vcc
A8
A9
WE
OE
A10
CE
I/O
GND
D0
D1
D2
C10 0.01
R11 22k
Q1
S06
D10 (1/2)
S05
D11
S04
D9
S03
D8
S01
D10 (2/2)
S1
S2
S3
S4
S5
S6
S7
S8
S9
S13
S14
S15
S16
S17
S18
S19
S20
S21
S22
S23
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S43
S44
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S46
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S48
S49
S50
S51
S52
S53
S54
S55
S56
S57
S58
S61
S62
S63
S64

IC1	PDG019-C
IC2	AZC1232
Q1	AZC1229
Q2	AZC1230
Q3	AZC1231
D2	AZC1224
D4	AZC1225
D5	AZC1226
D6–D9, D11	AZC1228
D10	AZC1227

1. RESISTORS :
   Indicated in Ω, 1/4W, 1/6W and 1/8W, ± 5 % tolerance unless otherwise noted k : kΩ, M ; MΩ, (F) ; ± 1 %, (G) ; ± 2 %, (K) ; ± 10 %, (M) ; ± 20 % tolerance.
2. CAPACITORS :
   Indicated in capacity (μF) /voltage (V) unless otherwise noted p ; pF. Indication without voltage is 50V except electrolytic capacitor.
3. OTHERS :
   ➡ ; Signal route.
   ⊘ ; Adjusting point.
   The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
   ※ marked capacitors and resistors have parts numbers.

   This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.
4. SWITCHES : (The underlined indicates the switch position)
   SW1 : REMOTE POWER
   S01 : AUDIO/VIDEO

	SR RECALL	USE	LEARN
S03	ON	OFF	OFF
S04	OFF	OFF	ON

S05 : M – CLR
S06 : SUR/AMP
S09 : RESET

S1 : AMP
S2 : TV POWER
S3 : VCR
S4 : SLEEP AMP/TV
S5 : V/AUX
S6 : TAPE
S7 : TUNER
S8 : PHONO
S9 : CD
S13 : PGM
S14 : DISC/DISPLAY
S15 : |◀◀/CHP/FR – TM
S16 : ▶▶| SEARC
S17 : ◀◀ CD/VDP
S18 : ❙❙
S19 : ■
S20 : ▶
S21 : ▶▶
S22 : ● (REC)
S23 : ❙❙
S24 : ◀◀
S25 : ◀/TV/VCR TAPE (DECK II) /VCR
S26 : ■
S27 : ▶
S28 : ▶▶
S29 : ◀◀/TV
S30 : ◀/VDP
S31 : ■/VCR TAPE (DECK I) /VCR
S32 : ▶/CH –
S33 : ▶▶/CH +
S34 : CD + 10
S35 : 1 – 12/13 – 24/TV ANT
S36 : BAND/DUAL
S37 : TV DISPLAY
S38 : CHANNEL +
S39 : CHANNEL –
S40 : 1/13
S41 : 2/14
S42 : 3/15
S43 : 4/16
S44 : 5/17
S45 : 6/18
S46 : 7/19
S47 : 8/20
S48 : 9/21
S49 : 0/10/22
S50 : 11/23/MEMORY
S51 : 12/24/CLEAR
S52 : TV FUNCTION
S53 : TV VOL +
S54 : TV VOL –
S55 : AUDIO SOURCE
S56 : VIDEO FUNCTION
S57 : SURROUND MODE
S58 : MUTING
S61 : MASTER VOLUME +
S62 : MASTER VOLUME –
S63 : SURROUND VOLUME +
S64 : SURROUND VOLUME –

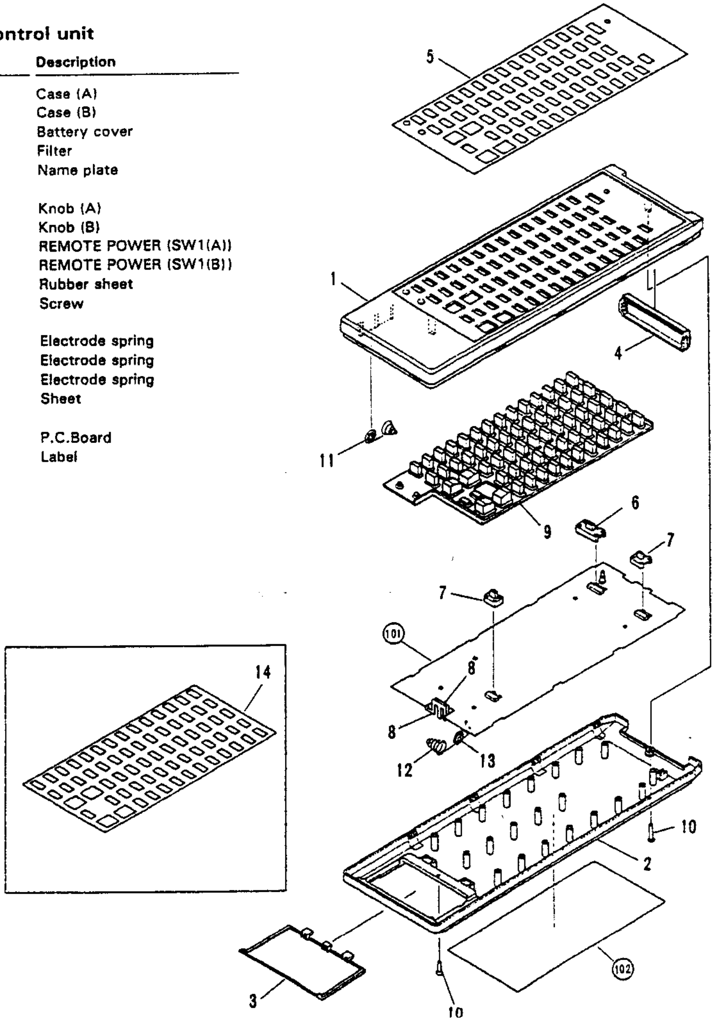
9.2.3 Exploded views and parts list

NOTES:

- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Parts list of Remote control unit

Mark	No.	Parts No.	Description
	1	AZA1136	Case (A)
	2	AZA1137	Case (B)
	3	AZA1138	Battery cover
	4	AZA1139	Filter
	5	AZA1187	Name plate
	6	AZA1142	Knob (A)
	7	AZA1143	Knob (B)
	8	AZA1144	REMOTE POWER (SW1(A))
	8'	AZS1077	REMOTE POWER (SW1(B))
	9	AZA1186	Rubber sheet
	10	AZA1146	Screw
	11	AZB1268	Electrode spring
	12	AZB1269	Electrode spring
	13	AZB1270	Electrode spring
	14	AZA1152	Sheet
	101		P.C.Board
	102		Label



9.2.4 Electrical parts list

NOTES:

- *Parts without part number cannot be supplied.*
- *Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

  Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	*56 × 10¹*	*561*	*RD1/4PS* $\boxed{5}\boxed{6}\boxed{1}$ *J*
47kΩ	*47 × 10³*	*473*	*RD1/4PS* $\boxed{4}\boxed{7}\boxed{3}$ *J*
0.5Ω	*0R5*		*RN2H* $\boxed{0}\boxed{R}\boxed{5}$ *K*
1Ω	*010*		*RS1P* $\boxed{0}\boxed{1}\boxed{0}$ *K*

  Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	*562 × 10¹*	*5621*	*RN1/4SR* $\boxed{5}\boxed{6}\boxed{2}\boxed{1}$ *F*

ELECTRICAL PARTS LIST

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC1	PDG019–C
	IC2	AZC1232
	Q3	AZC1231
	Q1	AZC1229
	Q2	AZC1230
	D2	AZC1224
	D4	AZC1225
	D5	AZC1226
	D6–D9,D11	AZC1228
	D10	AZC1227

SWITCHES

Mark	Symbol & Description	Part No.
	S01,S06 Slide switch (AUDIO/ VIDEO,SUR/AMP)	AZS1073
	S03,S04 Slide switch (SR/USE/LEARN)	AZS1074
	SW1(A) REMOTE POWER	AZA1144
	SW1(B) REMOTE POWER	AZS1077

CAPACITORS

Mark	Symbol & Description	Part No.
	C1,C2 (100μF/6V)	AZC1253
	C3 (10μF/16V)	AZC1254
	C4,C5 (100pF)	AZC1222
	C6,C8–C10 (0.01μF)	AZC1220
	C7 (1000pF)	AZC1221

RESISTORS

Mark	Symbol & Description	Part No.
	R2 (2.7Ω)	AZC1219
	R3 (100kΩ)	AZC1210
	R4 (680Ω)	AZC1217
	R5 (8.2kΩ)	AZC1214
	R6 (4.7kΩ)	AZC1215
	R7 (33kΩ)	AZC1211
	R8 (3.3MΩ)	AZC1218
	R9 (1kΩ)	AZC1216
	R10 (10kΩ)	AZC1213
	R11 (22kΩ)	AZC1212

OTHERS

Mark	Symbol & Description	Part No.
	X1 Ceramic resonator (2.0MHz)	AZC1223

10. SPECIFICATIONS

Amplifier Section

[RX-521]

Continuous Average Power Output is 110 watts* per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz with no more than 0.09% total harmonic distortion.**

[RX-721]

Continuous Average Power Output is 125 watts* per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz with no more than 0.09% total harmonic distortion.**

[RX-521/RX-721]

Input (Sensitivity/impedance)	
PHONO MM	2.5 mV/47 kΩ
CD, VIDEO/AUX	150 mV/47 kΩ
Frequency Response	
PHONO MM	20 Hz to 20,000 Hz±2 dB
CD, VIDEO/AUX	20 Hz to 50,000 Hz±3 dB
Signal-to-Noise Ratio (IHF, short circuited, A network)	
PHONO MM	72 dB
CD, VIDEO/AUX	90 dB
Graphic Equalizer frequency band	100 Hz, 330 Hz, 1 kHz, 3.3 kHz, 10 kHz, ±8 dB

* *Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier.*

** *Mesured by Audio Spectrum Analizer.*

FM Tuner Section [RX-521/RX-721]

Frequency range	87.5 MHz to 108 MHz
Usable Sensitivity	14.2dBf, IHF (1.4 μV/75 ohms)
50 dB Quieting Sensitivity	Mono: 20 dBf (2.7 μV/75 ohms)
Signal-to-Noise Ratio (IHF, 85 dBf input)	Mono:70 dB Stereo:67 dB
Stereo Separation	43 dB(1 kHz)
Frequency Response	$^{+1.0}_{-1.5}$ dB (20 Hz to 15 kHz)
Antenna Input	75Ω unbalanced 300Ω balanced

AM Tuner Section [RX-521/RX-721]

Frequency range	530 kHz to 1,700 kHz
Sensitivity (IHF, Loop antenna)	385μV/m
Antenna	Loop Antenna

Cassette Tape Deck Section [RX-521/RX-721]

Systems	4 track, 2-channel stereo
Heads	Recording/playback head × 1 Playback head × 1 Erasing head × 1
Motor	DC servo 2 speed motor × 2
Wow and Flutter	0.13% (WRMS)
Fast Winding Time	Approximately 105 seconds (C-60 tape)
Frequency Response	
−20 dB recording:	
Normal tape	35 Hz to 14,000 Hz ± 6 dB
CrO_2	35 Hz to 15,000 Hz ± 6 dB
Signal-to-Nise Ratio	
Dolby NR OFF	50 dB
Noise Reduction Effect	
Dolby B type NR ON	More than 10 dB (at 5 kHz)

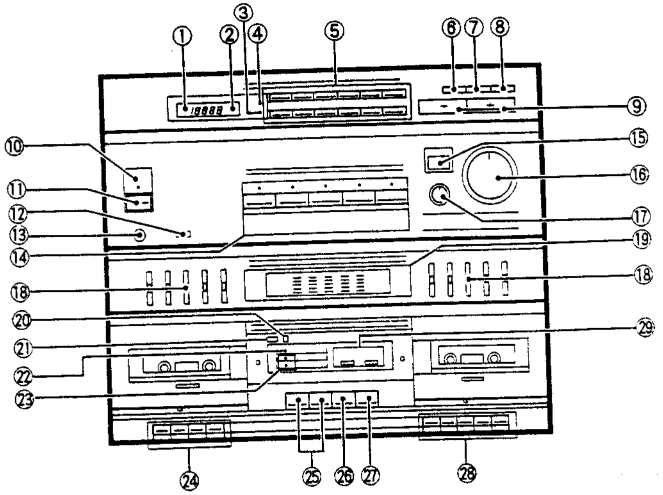
Miscellaneous [RX-521/RX-721]

Power requirements	AC 120 Volts, 60Hz
Power Consumption	
RX-521	380 W, 495 VA
RX-721	380 W, 495 VA
Dimensions	420(W) × 349.5(H) × 303(D) mm 16-9/16(W) × 13-3/4(H) × 11-15/16(D) in
Weight (without package)	
RX-521	9kg (19 lb 13 oz)
RX-721	10kg (24 lb)

Furnished Parts [RX-521/RX-721]

FM T-type Antenna	1
AM Loop Antenna	1
Operating Instructions	1
Remote control unit	1
Dry cell batteries	2
RX-721S:	
Operating instructions for the remote control unit	1

11. PANEL FACILITIES



TUNER SECTION

① FREQUENCY/station number display

② FM MONO indicator

Lights when the FM MONO switch is pressed to select monaural FM reception.

③ STEREO indicator

This lights during FM stereo reception

④ TUNED indicator

This lights to indicate that a station has been optimally tuned in.

⑤ STATION CALL switches

These are used to recall preset broadcasting stations and to preset the station.

⑥ MEMORY switch

This switch is used to memorize stations. When the switch is pressed, the FREQUENCY indicator will flash. To memorize the frequency of any station, press one of the STATION CALL switch while the frequency indicator is flashing.

⑦ FM MONO switch

Normally, the FM MONO indicator remains off. However, it may not be possible to tune in a desired FM station because it is too far away or because its signals are too weak. In cases like these, press the switch to set the reception to the monaural mode (FM MONO indicator lights) and tune in the station. The program of an FM stereo broadcast will be heard in mono. This switch will not function for AM reception. The FM MONO setting is memorized along with station frequency when presetting a station.

⑧ BAND selector switch (FM/ AM)

This is used to select the band of the desired station. The bands change alternately each time the switch is pressed.

FM reception
AM reception

⑨ TUNING switch (−, +)

These are used to locate stations. Push the "−" switch to locate a station broadcasting on a lower frequency and the "+" switch to locate a station broadcasting on a higher frequency.

AMPLIFIER SECTION

⑩ STANDBY/SLEEP indicator

This indicator lights in standby status or when the sleep timer function is operating when the power cord is connected to a power outlet.
When the SLEEP key on the remote control unit is pressed, the sleep function activated for approximately 60 minutes, then enters the standby mode. (The STANDBY/SLEEP indicator flashes faster as the end of the set time nears.)

⑪ POWER (STANDBY/ON) switch

When this switch is set to the ON position, the STANDBY/SLEEP indicator goes out and power is supplied to the main circuits of the cassette tape deck receiver. The POWER unit's switch is geared to selecting the transformer's secondary so that even in STANDBY position, the unit's circuitry will work as long as the power cord is connected to a power outlet.
Disconnect the power cord from the power outlet when you do not plan to use the cassette tape deck receiver for a long period of time.

The cassette tape deck receiver has a backup function, so it will return to the original status when the power cord is unplugged and soon again plugged into the power outlet.

⑫ SPEAKERS switch (▮ A, ▬ A + B)

This is used to select the speaker through which you wish to listen.

▮A :	When the speakers connected to A terminals are in use.
▬A + B :	When the speakers connected to A and B terminals are in use. (There is no sound at this position when speakers are connected only to the A terminals.)

Be sure to use A terminals when you use a pair of speakers only. No sound will be heard through the speakers when only a pair of speakers are connected to B terminals.

⑬ PHONES jack

This is a "standard plug-type jack" for headphones.
NOTE:
Sound is not heard from the speakers when headphones are in use.

⑭ FUNCTION switches/indicators

The indicators light for the specified functions.

⑮ REMOTE SENSOR window

⑯ VOLUME control/indicator

The volume is increased when this control is turned clockwise, decreased when turned counterclockwise. When operating with the remote control unit, the control automatically turns clockwise when "+" is pressed, counterclockwise when "−" is pressed, and the indicator on the VOLUME control flashes rapidly.
The indicator also flashes when the muting function is operated by the remote control unit.

⑰ BALANCE control

Usually set this control to the central position. If turned counterclockwise, the volume of the right channel will decrease. If turned clockwise, the volume of the left channel will decrease.

GRAPHIC EQUALIZER SECTION

⑱ GRAPHIC EQUALIZER controls

⑲ SPECTRUM ANALYZER display

CASSETTE TAPE DECK SECTION

- The cassette tape deck receiver is provided with an automatic tape selector function.
  Deck I . . . . . NORMAL/CrO$_2$, METAL
  Deck II . . . . . NORMAL/CrO$_2$

⑳ DECK I TAPE COUNTER RESET switch

㉑ DECK I TAPE COUNTER

3-digital display measures tape travel on deck I.

㉒ DOLBY NR indicator

㉓ COPY MODE indicators

㉔ Deck I switches

▶ (PLAY)	Playback.
◀◀ (REW)	Rewind
▶▶ (FF)	Fast forward
■/▲ (STOP/EJECT)	Stops tape travel. Ejects cassette if pressed when tape is stopped.

㉕ COPY MODE switches

These switches are used to select the copy mode.

HIGH	High speed copying (double-speed, halftime copying)
NORMAL	Normal speed copying

NOTE :
When the COPY MODE indicator is blinking (copy standby mode) the playback operation is not available for only DECK I or only DECK II, and the recording operation is not available for DECK II only.

㉖ DOLBY* NR switch

Press to activate noise reduction system. Use to play back tapes recorded using Dolby B NR.

- Tapes recorded using Dolby B NR should always be played back with the noise reduction system on. Sound quality will be adversely affected if they are played back with the system off, or if tapes recorded using a different noise reduction system are played back with the Dolby B NR system on.
- It is recommended that tapes recorded using Dolby B NR be so marked on the label. This will help to prevent incorrect setting of the noise reduction switch during playback.

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* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"Dolby" and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation.

㉗ Deck II PAUSE (❚❚) switch

This switch is used to temporarily stop the tape in deck II. The PAUSE indicator lights during the pause mode. The pause mode is cancelled when the switch is pressed again. The PAUSE switch will not function while copying a tape.

㉘ Deck II switches

● (REC)	Set to the recording mode.
▶ (PLAY)	Playback
◀◀ (REW)	Rewind
▶▶ (FF)	Fast forward
■/▲ (STOP/EJECT)	Stops tape travel. Ejects cassette if pressed when tape is stopped.

㉙ DECK II MODE indicators

REC (●)	Lights during recordind
PAUSE (❚❚)	Lights during the pause mode.